AUGUST, 1961

Industrial FINISHING

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FIGURING COSTS ON PRODUCT PAINTING
PAGE 26

Surface Treating and Finishing Rambler Automobiles
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Cleaning, Forming and Painting Plastic Signs
PAGE 36

Big Plant Has A Little Shop for Small Work
PAGE 56

Compact Finishing Setup for Kitchen Cabinets
PAGE 62

Finishing Cosmetic Cases
PAGE 70

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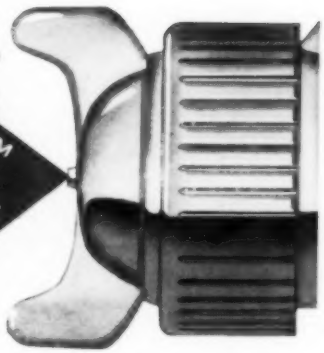

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W. H. ROHR, *Editor* P. C. BARDIN, *Field Editor*

August, 1961
Vol. XXXVII, No. 10

BPA

A monthly magazine for company executives, production superintendents, process engineers, chemists, purchasing agents, paint shop and finishing department foremen of industrial plants where product surface cleaning and painting are major operations in the manufacture of parts and products of all kinds.

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West Coast Editor
CHAS. R. BROWN

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Accepted as Controlled Circulation Publication at Indianapolis, Indiana

37 THIRTY-SEVENTH YEAR OF PUBLICATION

Curved Flat Belt Conveyor. Heretofore flat conveyor belts have moved only in a straight line, but now a belt has been developed for going around a curve—in an almost right angle turn or even in a hairpin turn of 180°.

A new belt design made the system practical. The special belt is inlaid with radial steel rods that keep it flat on the conveyor bed, even at high speed.

The new concept places all restraining idlers on curved conveyors along the belt's inside radius to avoid carcass strain and tearing of previous designs.

The system is the result of two years of development work.

Mail bags on this conveyor system pile up many miles but don't get anywhere. They are among packages used in continuous run tests of Goodyear's Curve-Flo conveyor design. Two 90° curves and one 180° curve make up a full circle for test purposes.

Heat Reflective P. S. Tape. A pressure-sensitive tape designed to reflect extreme heat from motors, wires and delicate structural parts is now offered by Minnesota Mining & Mfg. Co. (3M), St. Paul 6, Minn.

Called "Scotch" brand No. Y-9050 heat reflective tape, it is capable of performing continuously at temperatures of 500° to 600° F., and can withstand more than 3000° F. of radiant heat for short periods.

The new glass cloth-aluminum foil tape was specially developed to meet urgent demands of missile and aircraft manufacturers for a more effective, easier method of protecting vital parts from intense radiant heat to assure proper performance. It can shield the parts from even the radiation of flaming rocket exhausts during launch to burnout—a period of one to two minutes—at temperatures of well over 3000° F.

* * *

Automatic Plastic Coating. A new plastic coating system has been designed as a completely integrated packaged unit which preheats, coats, cures and cools continuously, with complete automatic control of product movement, heating, ventilation and application of the plastic.

The equipment was engineered and built by W. S. Rockwell Co., Fairfield, Conn., for a prominent manu-

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facturer of electric motors and appliances. Its purpose is to apply powdered epoxy to a uniform thickness, by depositing it into the slots and onto both ends of the armatures, without coating either the peripheral surface of the armature or the shaft on which it is mounted.

The process cycle consists of travel of the parts through the preheat oven, transfer to the coating unit, where powdered epoxy builds up to the required thickness of coating, travel through the curing oven and, finally, cooling in a tunnel to the original point of loading. All operations are continuous and automatic.

* * *

Washes Heavy Equipment. A self-contained washing unit for industrial applications is offered by Weaver Mfg. Div'n. of Dura Corp., Springfield, Illinois.

The Weaver "Wash-All" has been designed to give factories a simple unit capable of cleaning motors, machinery, parts and assemblies, as well as the floors and walls throughout the shop.

Built of non-corrosive brass and plated steel, with only one moving part, the "Wash-All" is easy to operate and virtually maintenance-free.

For washing equipment that can't be moved.

Air-powered at recommended pressures of 150 to 175-psi., the "Wash-All" can be mounted in any standard, open-top, 55-gallon metal drum and is equipped with both wide and narrow spray nozzles to increase its utility.

* * *

Emergency Light. A new light which turns on automatically when electric power fails has been developed by Astronautics Engineering Corp., 500 W. 18th St., Hialeah, Fla.

Astro-Lite, designed for home or commercial use, helps prevent accidents, panic or pilfering during power failures. It has an automatic switch that cuts on immediately when the electricity goes off.

Manufactured in four decorator colors, the safety light looks like a small portable radio. It is made of shatter-proof styrene.

Since it is compact and measures only 6½x8-in., it can be hung on a wall or placed on a table. It plugs into any wall fixture or electrical outlet.

* * *

Tape Replaces Steel Strapping. Colored pressure-sensitive tape has been selected to close and reinforce a new type of polystyrene container designed to hold delicate gear-pump parts.

The filament tape rapidly closes and clamps together the two halves of the feather-weight container and assures a good seal despite shock or possible damage caused by the container.

With acetate backing, rayon filaments, and tensile strength of 250-lbs. per square inch of width, the reinforced tape was selected over strapping which the firm said could not resist corrosion and was unable to remain tight and conform to the container during rough treatment.

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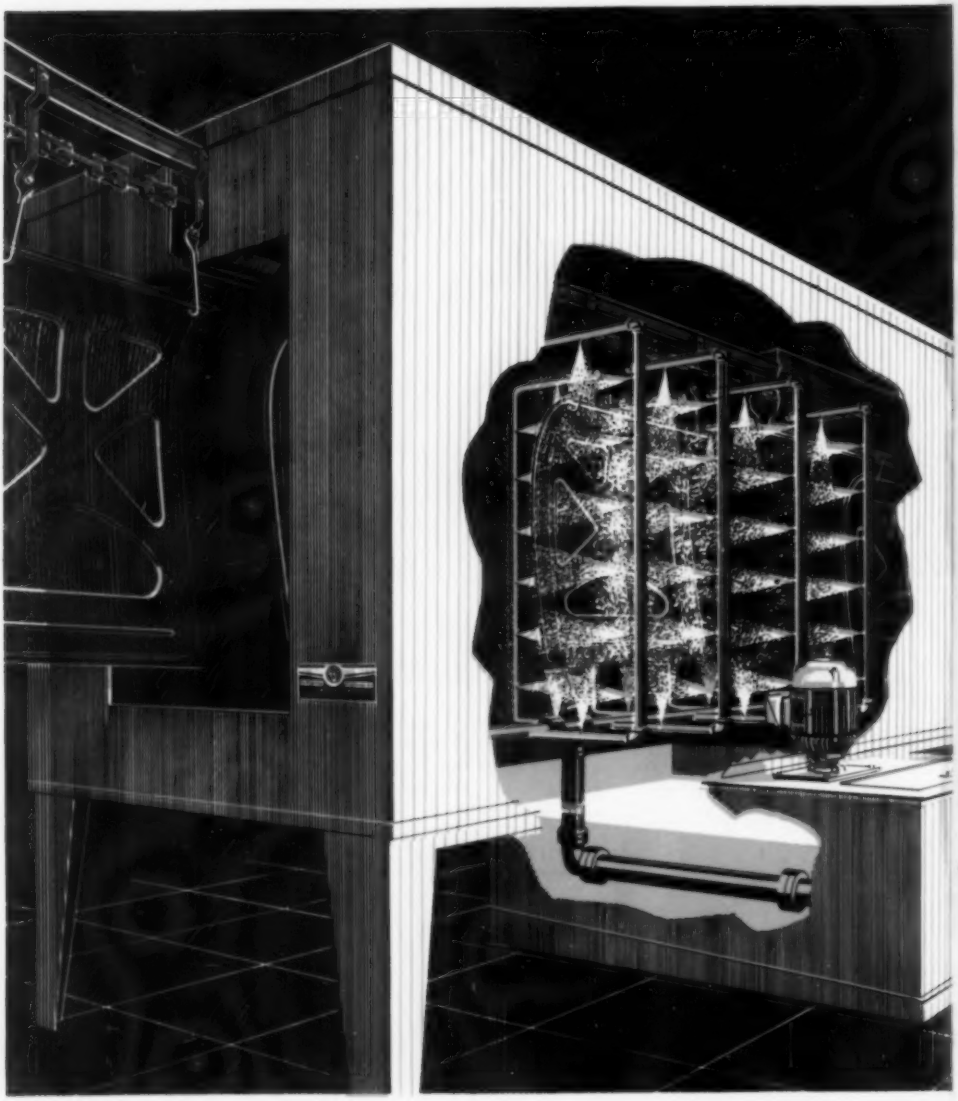
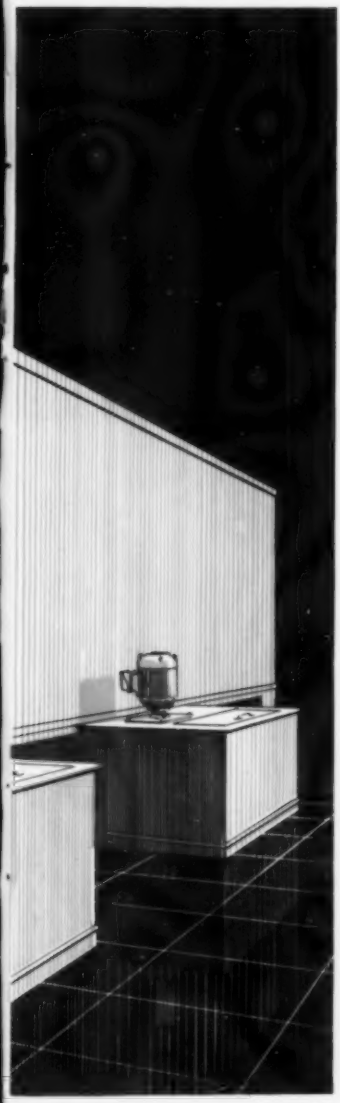


treating with DeVilbiss power spray washers



DeVilbiss standardized washers—that come completely assembled, ready to hook up—have created quite a stir. Look into them for all your cleaning and metal-treating requirements.

With more involved processes, you'll need a washer tailor-made to your job—the size of your work, the chemicals, kind of soil to be removed, or surface treatment necessary. DeVilbiss engineers have long experience working on all types of metal-cleaning and treating applications. They cooperate closely with your engineers to match machines to processes—to assure top efficiency, lasting service.

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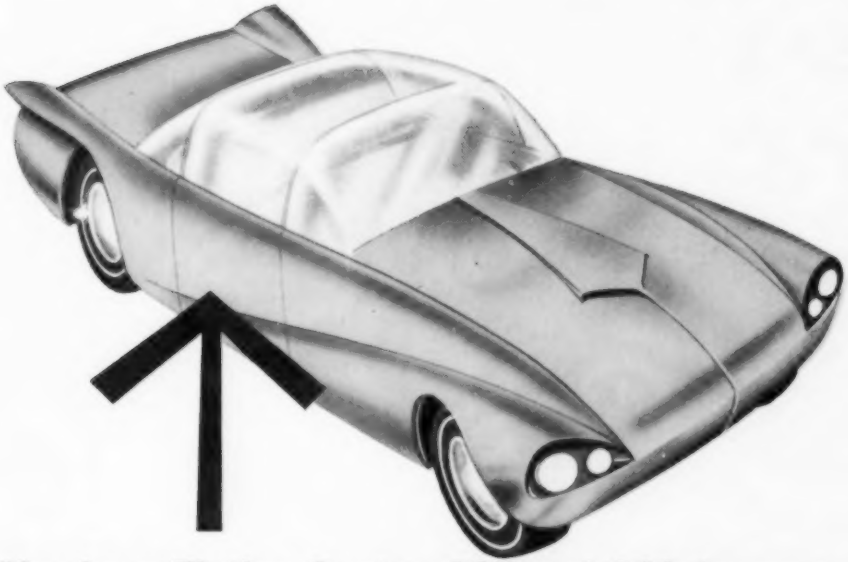

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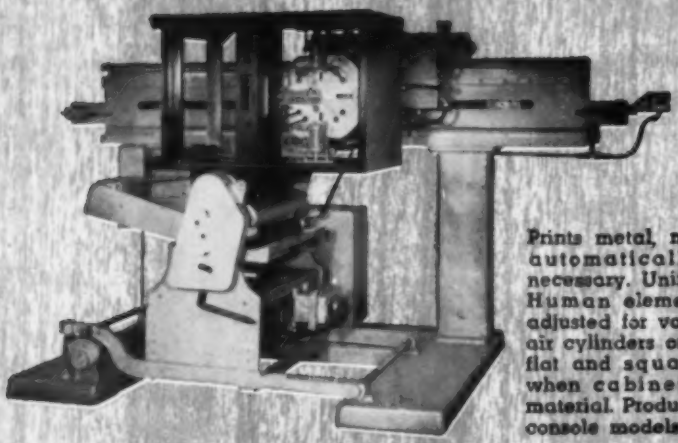

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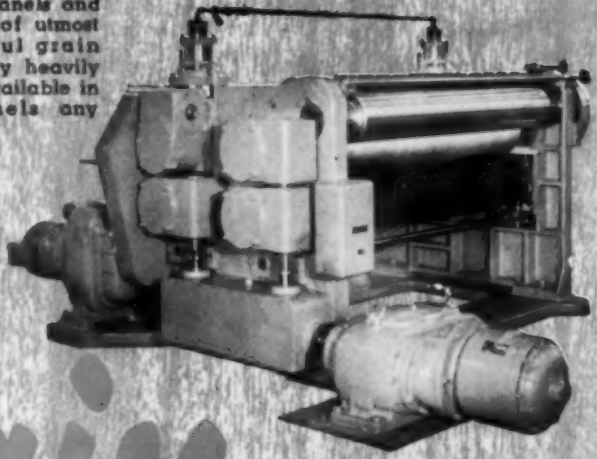

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Industrial FINISHING

August, 1961, Issue

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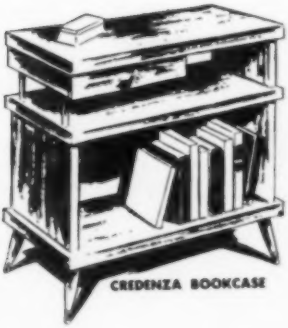


CREDENZA BOOKCASE

PERFEX SATIN FINISHES FOR TABLES

No Rubbing Needed!...

MODERN DESK

DRUM TABLE

Many table manufacturers are using Perfex Satin Finishes to secure that rubbed appearance and waxed feel —without the costly rubbing operation—and while ideally suited to tables, *numerous other pieces of furniture are likewise candidates* for these labor-saving, time-saving finishes.

PERFEX was the original "flat" to be made by a new and different process (without the use of stearates or flattening agents) and it is still the "flat" which comes nearest to producing an actual rubbed varnish appearance. It is the Perfect flat finish—quick set, quick dry, waterproof, liquor proof, good build, full smooth body, beautiful rubbed effect, smooth waxed feel. Available in a full range of sheens.

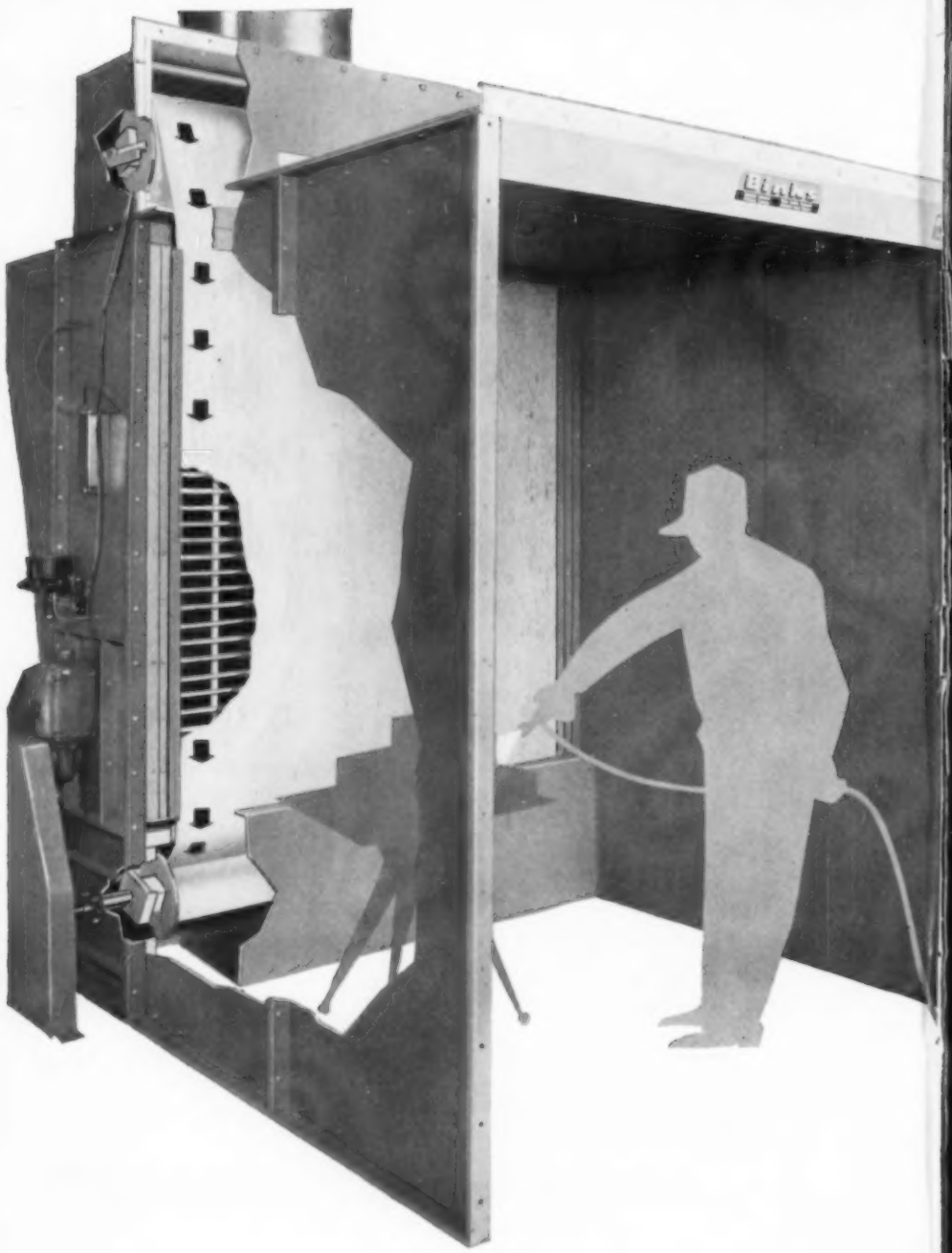
PERFECTION

If you manufacture tables or other furniture and are interested in securing an excellent rubbed finish effect, without a costly rubbing operation, we invite your inquiry.

PAINT AND COLOR COMPANY

INDIANAPOLIS 2, INDIANA

For more data, circle 164 on colored card.



New Binks Dispo Spray Booth has...

2250 sq. ft. of disposable "filters"

automatic curtain rolls away paint overspray

The secret of the new Binks Dispo Spray Booth is a 150-yard disposable curtain which collects paint overspray . . . approximately 150 gallons...that's 2250 sq. ft. of filtering!

It's economical . . . a roll costs less than 2 cents per square foot...about 80% less than most paint filters cost.

It's safe...manufactured to meet NFPA fire standards...accepted by all major insuring companies.

It's automatic . . . when the curtain collects a pre-determined amount of overspray, a new section advances automatically.

It's simple...one man can change a roll in 5 minutes.

Ask for Bulletins A-27-14 & 15 for complete details. Your Binks Distributor has copies, or write to the address below.

Ask about our spray painting school. Open to all . . . NO TUITION . . . covers all phases.

Binks Manufacturing Company 3120 Carroll Avenue, Chicago 12, Ill.

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1238

Binks Everything for spray painting

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Figuring COSTS on Product Painting

BY HENRY HERMAN

ONCE UPON a time the painting of parts and products was considered a necessary nuisance. The general attitude toward paint was, "Paint is paint, thinner is thinner, so jack up the pressure and get going!"

It wasn't until World War II that technological advances began to have a sobering effect on the uninformed. The exacting requirements for coatings to perform under the worst possible conditions certainly presented a challenge to modern formulators as well as to applicators. Adherence to military specifications instilled a certain discipline in the observation of standards for the application and control of protective and decorative coatings. Thus, organic coatings came to be seriously regarded as engineering materials.

Costs presented no problem where time and materials were the prevalent factors. Painting operations were accurately accounted for and were controlled by standards established with time and motion studies. Incentives for increased production, punitive measures for any poor workmanship, greatly enhanced our reputation as a leader in production. Much of what we

The illustrations for this article were designed and executed by Charles Dennis.

learned helped us through the post-war period in applying our knowledge and skills to provide new and better things for our increasing standard of living.

Guestimated Overall Costs; Simplified Unit Costs

In an effort to stabilize certain expenses and manufacturing costs, most concerns relaxed their vigilance in controlling finishing costs. Since that time much of the figuring of finishing costs has been "guestimating" on an overall basis. Where standards are set with time and motion studies, or where an automatic operation is governed by machine and conveyor speeds, the direct finishing cost can be easily established and controlled. We must first assume, of course, that all costs (direct and indirect) and departmental expenses have been propertly assigned to functions that are directly concerned with operation of the finishing department. However, a majority of the finishing departments depend on manual application of coatings as well as the handling of parts by indirect and direct labor.

A surprising number of people don't particularly care about their product painting or finishing costs. When asked about the unit cost, they say they add up the labor and paint cost and divide it by the number of units finished that day. This gives them their unit cost. On the surface, this sounds fairly simple. However, this reasoning is quite precarious because you are not allowing for any variables.

For example, I am thinking about a manufacturer of metal wardrobes whose product is in a very low price bracket. He applies only one coat of the cheapest paint available. Quality control is very simple; he waits for his customers to reject a product for manufacturing or painting defects. As far as he is concerned, this still does not affect his unit cost, for as he puts it, "Why bother with a few rejects? We still put out enough units to cover them."

Many Variables to Consider When Figuring Costs

Despite the case just cited, there is a growing concern regarding finishing costs. There is no set formula for establishing costs or controls. Each finishing department operates under conditions governed by policies of its management, geographical influence, personalities, temperment, degrees of skill, technical knowledge, budget, assignment of authority and responsibility, etc. I have yet to see two finishing departments conduct their operations in similar fashion. For example, one would image that the automobile manufacturers would use identical painting techniques and methods. There are no two alike; and this is reflected in their painting costs.

In the furniture industry, where even the same conveyorized systems are utilized, the costs are peculiar only to each department. This has no bearing on the number of coats applied, rubbing standards, etc. There have been projected percentages on just what the finishing costs should be. These have ranged from 4% to 12%. But these percentages reflect past his-

tory rather than current events, and will fluctuate for what seems to be no apparent reason. They are projected percentages which include all operations in the application of organic coatings, regardless of surfaces or products involved.

Consider Type of Operation; Establish "Break Even" Point

The question has always been, "How can I determine my finish costs?" Determining your finishing costs would again be predicated on past history. However, let us pursue the question regarding, "What should my finishing costs be?" First we must consider the type of operation; is it a job shop or a manufacturing department.

Do we want to know the overall cost, or are we interested in unit cost? Unit cost can best be established through time study. A time study can provide a rather sound basis for analyzing all of the elements involved in the operation. However, the study is only as good as the conditions under which it was taken. Fluctuating conditions would immediately rule out any study as a standard of accuracy.

To establish a true overall cost, we must first know what the entire cost of the total plant operation is, including non-productive expenses and costs. This is necessary so that we will know where the "break-even" point can be pin-pointed. Remember, your "break-even" point is predicated on the efficiency of each productive and non-productive function, wherein each in turn influences profits or losses. You must bear in mind that each of these functions has certain assigned expenses which are either fixed, variable or semi-variable. These expenses are determined by the level of activity within each function.

Let us assume that the "break-even" point is 75% of normal (100%). Should activity drop to 80% (below normal), we would then be threatening the "break-even" point. If it drops below 75%, then you are operating at a loss. You cannot, then, merely relocate the "break-even" point, for that would be tantamount to an entire reorganization of the business.

Use Your Costs in Estimating, Not Your Competitor's

If you are operating a job shop, it is extremely important that you estimate costs based on the overall operation, and that you know exactly where your "break-even" point is. Knowing your "break-even" point will enable you to establish a more accurate formula on which to base your estimates. When estimating a job, don't be influenced by prices submitted by your competitor; his conditions and facilities may permit him to quote lower prices. Of course, you might "cut corners" and call upon a few reserve "tricks," but you are still out of your "element."

Stay with those jobs that you know you can handle, or else get the proper facilities that will enable you to be more flexible. Don't make the mistake of attempting to temper your prices with cheaper materials. You should know by this time that you only get what you pay for. Above all, don't substitute for specified materials,

For more data, circle 166 on colored card. ——→

Water-soluble Melaqua® 600 Resin is non-inflammable. Now, get all the advantages of solvent-based enamels without danger of fire in the baking room. Water-soluble Melaqua® 600 melamine-acrylic resin is non-inflammable, yet delivers high gloss . . . hard finish . . . resistance to heat and weather. The melamine resin in Melaqua 600 makes it solvent-resistant . . . the acrylic polymer in it produces smoother films and cleaner, brighter colors. Write for complete information about Melaqua 600, the first of a wholly new family of water-dispersed thermosetting industrial coating resins.

AMERICAN CYANAMID COMPANY CYANAMID PLASTICS AND RESINS DIVISION

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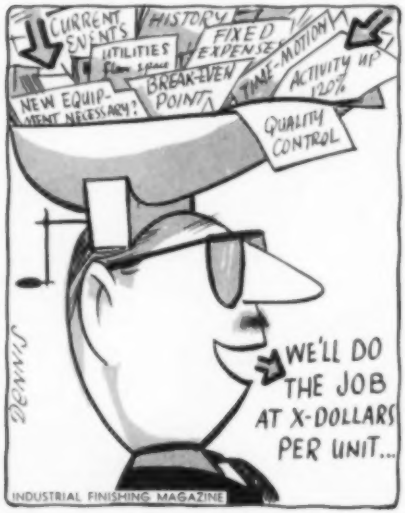
"similar" materials just because they are "cheaper." If you can't give your customer what he wants at the price he specifies, then don't touch it. Once you have established your method for estimating costs, stay with it. If you start shoving the digits around to please yourself, then you may as well forget all about it and use the old hit-and-miss method.

No Magic Formula; Just Figure What Enters into Cost

There is no magic formula for determining the cost of any finishing operation. No special ingenuity is necessary to find out the cost



of finishing a dresser, or a mobile metal wall, a metal cabinet, a toy, a machine tool, an occasional table, a leather side, a bobby pin, or a bus. I am sure that each of us knows the unit cost of the products we are familiar with.

The unit cost actually does not contribute to controlling the level of activity in the finishing department. It is based on past performance and we record it as a statistic to serve as reference material. If the level of activity changes then we must re-evaluate the unit cost and make the necessary adjustments so as to conform with the level of activity. Where unit cost has been predicated on an overall basis, the cost is self-adjusting and conforms with the level of activity.

If you know your "break-even" point, and have established controls for assigned expenses (function operations), you can go one step further and assign additional controlled expenses to the finishing department. The "break-even" point can be established by the minimum production requirements and flow of finished goods. Don't try to set your "break-even" point unless you know what your real expenses are.

Fixed expenses (overhead) include utilities, floor space, maintenance, salaries.

Semi-variable expenses include wages (hourly) paid to employees.

Variables consist of paints, lacquers, etc., supplies, repairs, patching materials, rags, papers, etc.

Forecast Level of Activity For Each Quarter, and . . . .

You will have to establish your own normal (100%) which can be determined from the previous year's performance. In setting up this type of control and analysis, it is desirable that you forecast the level of activity for each quarter

from bowling pins to typewriters

there's a
Randolph Finish
for every purpose . . .

Electronic Equipment
Appliances
Office Equipment
Furniture
Sports Equipment
Toys
Lighting Fixtures
Plastics
Panelboard

. . . formulated with the high quality and exact suitability developed by more than a quarter century of experience!

The increasing variety of products turned out by modern industry calls for an extraordinary array of suitable finishes. Randolph—specialist in the production of **exactly-right industrial coatings**—has risen to the challenge. Expert technicians, intensive research and unexcelled know-how are the key factors behind the wide variety of excellent Randolph finishes meeting every need of industry today.

Solving industry's finishing problems is a **Randolph service.** Do you have one? Let us help you with it. You won't be obligated in any way.

Fast delivery is another Randolph service you can depend on.

Randolph PRODUCTS COMPANY
CARLSTADT, NEW JERSEY
LACQUERS • ENAMELS • DOPES • THINNERS

For more data, circle 167 on colored card.

and project the assigned expenses. After one complete year of operation, you can easily forecast the level of activities and assign expenses according to each level.

At 100% normal, fixed expenses as well as the variables will be indicated at a certain percentage. Should production activity drop to 80%, the fixed expenses remain fixed, but the variables compensate for the drop. By the same token, should activity move upward to 110%, 120% or 130%, fixed expenses remain steady, and the variables likewise compensate. Your Profit & Loss statements can provide you with all the necessary data upon which to project your forecast for the quarter to follow. This will act as a guide in assigning expenses for each level of activity.

This is about the only system I can think of that will permit you to establish costs based on current events, rather than past history. It is about the only sure method that considers the future and provides for all contingencies that may arise. At least you will be well prepared.

Drying Finish on Leather

ACCURATE temperature control is vitally important in drying finishes on leathers, since it must be done without drying out the hides themselves or lessening their natural suppleness and pliability.

Exact regulation of temperature is even more important at the Berlin Tanning & Mfg. Co., Berlin, Wisc., according to Harold Fischer, Plant Superintendent, for they finish not only their regular cowhide leathers but also fine deerskin leathers, which have different characteristics.

Here controlled drying is very important.

Formerly the concern used other methods but now this drying is done in a few minutes on a conveyor which passes through a small ceramic type electric infrared oven, thereby increasing production greatly without increasing overhead expense, Mr. Fischer said.

This oven is divided into two zones, each of which can be set at a different temperature. The temperature in each zone is set at the desired level merely by turning a knob. This makes it easy for the company to dry all of the different kinds of leathers it produces, including deerskin for shoe, garment and glove manufacturers; glove-tanned softie cowhide upper leather; stuffed leathers; aniline and finished linings; gusset leathers for shoe manufacturing, and cowhide garment and glove leatthers.

W. L. Batty Promoted by G. E.

W. L. Batty, Jr., has been promoted to the post of manager of the western district of the Silicone Products Department of General Electric. His office location will be at 8555 E. Florence Ave., Downey, California.

For Quality Finishing, STORKLINE uses SPEE-FLO HydraAirless with the H-GUN

Here's why-

Alex J. Haick, superintendent, Electronic Product Division in Jackson, Miss., reports on Spee-Flo HydraAirless lacquer applications:

- Better Build and Holdout
- Improved Coverage
- Percentage of Rejects Significantly Reduced
- Finishing Cost Savings of 15% or More
- Faster Application
- Reduced Overspray
- 30% or More Reduced Booth Cleanout Time
- Superior Quality

Storkline found the difference in airless . . . Spee-Flo HydraAirless with the H-Gun. The Storkline story is typical . . . increased production complemented by reduced costs. HydraAirless and the H-GUN will spell out the same good news for **you!** Contact your nearest Spee-Flo distributor or write to Spee-Flo Company, 6614 Harrisburg, Houston 11, Tex.

Storkline Corporation is a leading manufacturer of cabinets for television, stereophonic sets, Hi-Fi's, radios and sewing machines, as well as infant and baby furniture, baby carriages and other furniture items.

The SPEE-FLO Company — 6614 Harrisburg Blvd. Houston 11, Texas — THE H GUN

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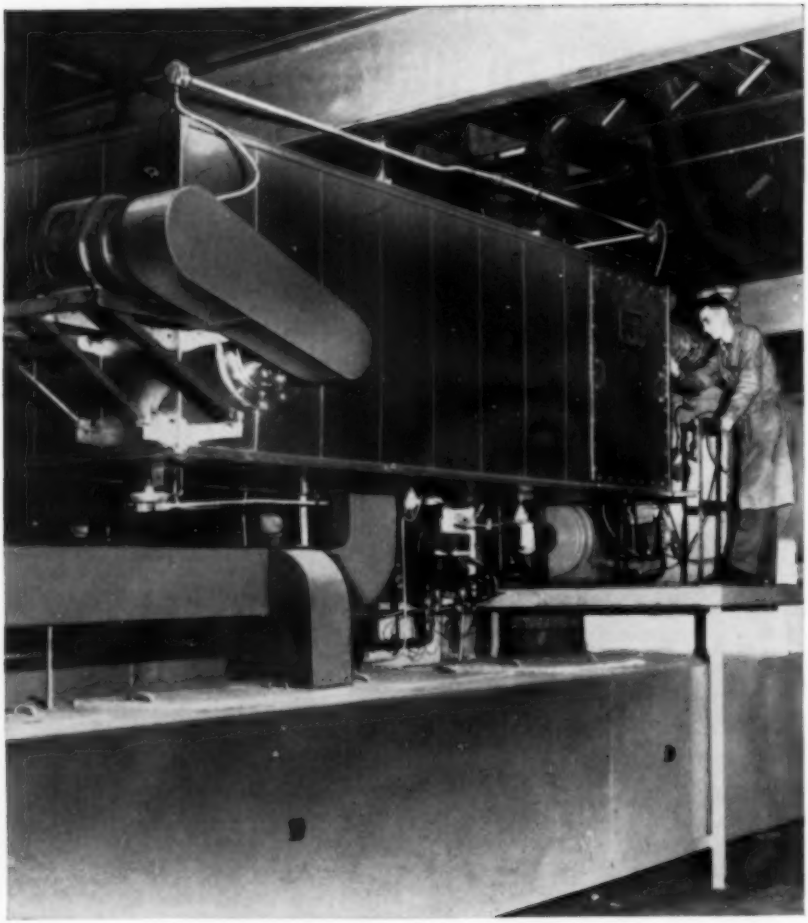
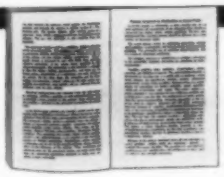


The Catalytic system on this continuous metal strip coating oven converts objectionable exhaust fumes into valuable heat energy which is released in the oven.

For more details *on the economies possible write Dept. B for this brochure. Or, give us a few facts on your oven exhaust problem so we can make specific suggestions . . . to you, or your equipment builder.*



That odor you smell is money escaping!

The odorous exhaust fumes coming from your ovens are probably costing you much more than the good will of your employees and neighbors. Usually these odors represent a wasted asset . . . a missed opportunity to lower your costs . . . through conversion of fumes to BTU's for return to the oven, use in plant processes, or as a supplement for heating plant make-up air.

Thousands of installations . . . on ovens and dryers for wire enameling, paint baking, metal decorating, paper printing and impregnating, organic coating and curing and many others . . . have proven the economy and feasibility of using objectionable oven exhaust vapors as money-saving fuels through Catalytic Combustion. In this proven process, all-metal catalysts and catalytic systems oxidize these gases by *low temperature, flameless combustion* to give you usable energy and an odorless, colorless discharge. Incidental benefits often include reduced fire hazards, simplified cleaning maintenance, healthier working conditions . . . and better community relations.

CATALYTIC COMBUSTION CORPORATION

4725 Fourteenth Street • Detroit 8, Michigan

A SUBSIDIARY OF UNIVERSAL OIL PRODUCTS COMPANY

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The section of polystyrene extrusion slips over the open end of the wood form for screen printing the Atlas-A sign. Guides on top of the form and in front hold the plastic sign in correct position for precise registration.

Cleaning, Forming and Painting

PLASTIC SIGNS

By Ott Schwartz
The American Sign Co.

POINT OF SALE advertising has greatly increased the demand for signs of all kinds and especially for illuminated display signs.

Here at the American Sign Co.*, present production is divided into three basic types of signs. These include custom, large outdoor and small signs for interior use.

Most of the custom signs that we have designed and built in the past few years have had plastic letters, plastic faces and, in many cases, complete plastic backgrounds.

*Cincinnati 4, Ohio.

Large plastic sheets are held firm and flat on vacuum top table as an operator screen prints the lettering and design. Note how the squeegee is held in correct position, but swivels to compensate for the long stroke.

To form a sheet of plastic we follow the more or less conventional procedure. First, we clean the plastic surfaces of any foreign material. Then the flat sheets are suspended vertically in an electric oven for 12 to 14 minutes at 325° to 375° F., depending on the thickness of the sheets. The plastic must be thoroughly heated through its thickness before it is formed.

Forming Plastic Signs; Cleaning; Screen Processing

The hot sheet is clamped into position and formed to the desired shape or pattern by means of vacuum, plug and ring, or matched male and female molds. After it has cooled, the formed plastic is removed from the mold to await trimming or further fabrication.

If the formed piece is one of a quantity being produced, it would have been silk screened prior to forming and, after trimming, a background color would be sprayed over the design or lettering on the second surface. The sign face is then ready to be installed into its metal housing.

On signs that are pre-screened (printed in color by screen process stenciling) we clean the flat cast plastic sheets with isopropyl alcohol. This serves a double purpose; it cleans the plastic sheet and reduces the static electricity as well. The actual screen process printing is done with a squeegee setup which enables one operator to screen the largest signs. The screening table top is made of a perforated composition material

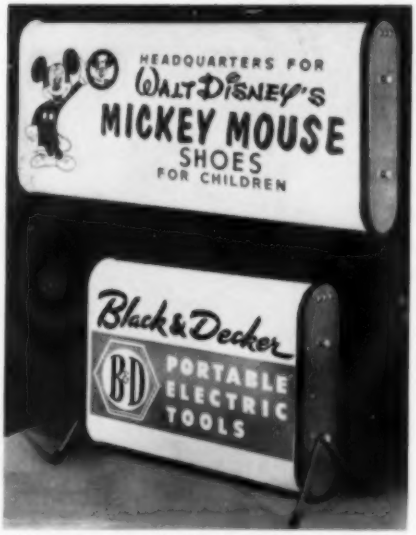
which is connected to a vacuum pump of sufficient capacity to hold the plastic sheet in correct position and perfectly flat during the screening cycle. The silk screens are of the water-soluble type which, of course, are resistant to the acrylic type paint being used. The inks we use are of the acrylic-base type so as to provide the maximum "bite" and adhesion to the plastic.

In addition to the foregoing we make a wide variety of illuminated signs and displays for indoor use. However, the greatest production is our Atlas model. This is made as a single or double-faced sign and is offered in a number of sizes ranging from 10 to 96-in. in length and from 11½ to 15½-in. in height. The Atlas sign has been well received by both large and small advertisers due, in part, to its extreme versatility for use. In addition to hanging or standing it can be mounted on a wall in such a way that it serves as a projecting sign.

Atlas Double-Faced Unit; Fixtures for Processing

The Atlas double-faced unit is a continuous extrusion of medium impact translucent polystyrene. In cross section it is not unlike a condensed letter "O" with flat sides. This design allows light to be transmitted through the top, bottom and both sides of the sign.

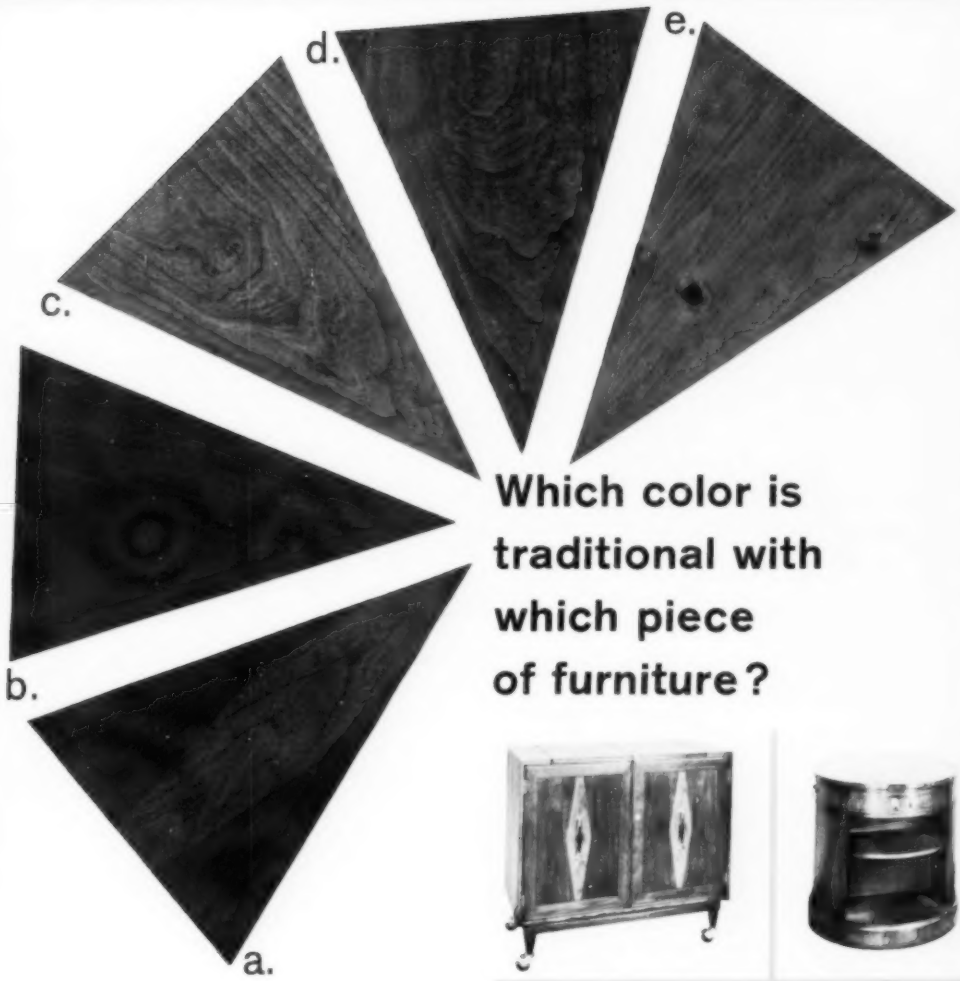
To silk screen the Atlas model involves somewhat more care than the average extruded plastic signs are given. Special jigs and fixtures must be used to hold and register the plastic under the screen. Then, due to the unusual shape of the sign face, the printed pieces must be dried while standing vertically, instead of being racked in horizontal position.



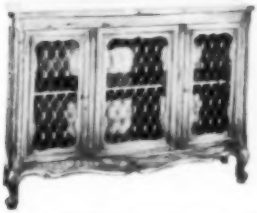
Typical Atlas double-face plastic signs.

Just before the screen process printing operation the extruded sections are carefully wiped inside and outside with alcohol to remove all surface dust. This precaution helps us to hold down rejects to a bare minimum. The actual screen printing is then done, using inks which are compatible to styrene, in that not only do they "bite" into the surface for greater adhesion, but if or when it is desirable, they can be removed without harm to the plastic surface.

The smartest people aren't those who know everything to begin with, but those who learn from experience.



Which color is traditional with which piece of furniture?



turn the page and see how the experts do it...

a. Modern bar cabinet

b. Traditional book table

c. French Provincial console

d. Italian Directoire table

Wolverine Finishes, Grand Rapids, Michigan—a division of Rinshed-Mason Company, specializes in custom finishes for furniture. Most people are aware of different furniture styles, but they don't realize that certain color finishes are traditional with each style. The correct coloring is extremely important to the design effect—the design and finish must be compatible. That's why furniture designers and manufacturers rely on Wolverine's expert color styling service for the right answers. And Wolverine relies on the highest grade chemicals to make the finishes . . . top-quality chemicals like USS TOLUENE. This high-quality nitration grade Toluene assures them consistent uniformity in all their finishes.

e. Early American silver chest

USS Toluene

TRADEMARK

Nitration grade Toluene from United States Steel is a dependable material that helps the specialists at Wolverine produce quality finishes. USS TOLUENE can assure quality in your product, too.

What Interferes With Satisfactory Work

HAVE YOU noticed that on some equipment it looks as if the designer or builder had tried to find the most inaccessible places in which to place oil cups, grease taps, controls.

Also, have you noticed that in certain plants equipment is located in some of the most inaccessible places? It may be too close to a wall or partition, or backed into a corner, or positioned too close to a heavy traffic aisle. In many cases this arrangement can be avoided.

Inaccessibility may be the cause of increased costs, not only in setup-time but in maintenance too. In other factories it is the workmen who put an obstacle course around the equipment. It may be a pile of empty tote boxes, or pallets stacked at the side or in back of the equipment, or parts in process, or conveyor hooks.

Now you may say such conditions indicate carelessness and poor housekeeping. Before saying it too loud, check on conditions in your plant. Sometimes these conditions grow very slowly, but eventually they get out of hand.—*J. B.*

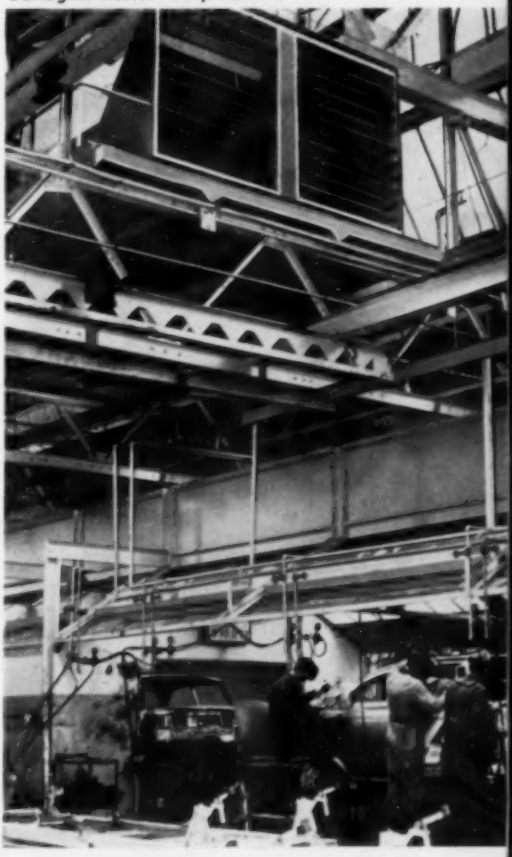
Filtered Make-up Air

FURNISHING 400,000-cu.ft. of filtered air per minute, the eight identical gas-fired air supply units installed in the main Plymouth Plant in Detroit are required to compensate for the air exhausted by the operation of the arc welding, gas welding, rough grind, torch solder and solder, to handle the unitized Plymouth bodies. These five booths and canopies exhaust a total of 311,000-cut.ft. of air per minute when in full operation, indicating the necessity for the 400,000-cu.ft. total air replacement capacity of eight air supply units.

At the top of the accompanying illustration may be seen the louvered outlet of one of these eight air supply units, while directly beneath may be seen Plymouth bodies emerging from the 117-ft. arc welding booth, and about to enter the gas welding canopy.

A company in Detroit designed, engineered and completely installed all body finishing booths and air supply units in this plant.

View in Plymouth plant where make-up air system is installed. Photo, courtesy of Gallagher-Kaiser Corporation.



Surface Treating and Finishing
Rambler Automobiles

DESIGN, STYLING and outward appearance are important factors in the sale of a new automobile. The finish on the car is what the prospective buyer sees and touches, but it is the foundation coats that support and prolong the useful life of that lustrous and colorful outer finish. How the metal surfaces are prepared, and how well the under coats are applied—these are big factors in determining the durability and effectiveness of the protective coating.

We believe in the Rambler finish. We know by actual tests that underneath that shiny exterior, the metal in every joint, flange and seam is effectively protected against the chemicals and salt used on roads, streets and highways; and against splashing dirty water, soggy mud and road dirt. How this is accomplished can best be revealed in a step by step description of the entire protective coating system.

Six Stage Washer Cleans And Phosphatizes Bodies

Before our auto bodies leave the fabrication department they receive the usual surface grinding and smoothing operations. They enter the cleaning department by an overhead monorail conveyor which

Applying a supplemental color coat to bodies that have come through the automatic spray.

By C. E. PFLUG
Plant Engineer
American Motors
Corporation

Car body suspended from an overhead monorail conveyor enters the 12000-gallon dip tank. It will be completely submerged in epoxy resin primer.

carries them through a 6-stage power washer and phosphatizing machine. The accompanying table shows the details of the processing setup.

All solutions in the power washer and phosphatizing machine are titrated every hour. A phosphate replenisher is continuously metered and pumped into the phosphate tank to maintain the solution at its prescribed strength. The phosphate coating is extremely important; it insures excellent adhesion of the primer to the metal and it serves as a rust inhibitor if or

Stage	Solution	Temp. in °F.
1	detergent & hot water	145
2	alkali cleaner	135
3	hot water rinse	120
4	phosphate solution	120
5	water rinse	room temp.
6	chromic-phosphoric acid	140

Dry-off oven, 10 minutes at 350°F.

when the paint film is deeply scratched or damaged during the life of the car. It confines any rusting to the exposed bare metal; rust cannot creep and spread to areas that adjoin the deeply scored or damaged place.

First Prime Coat is Applied by Dipping

The bodies cool as they travel by overhead conveyor to the prime dip tank where the entire body is submerged in a brown, epoxy resin primer. This primer is automatically maintained at a viscosity of only 14 seconds at 78° F., as measured in a No. 4 Ford cup. The 12,000 gallon dip tank is fully enclosed. At its exit end a series of flow nozzles direct the same brown primer over the entire outer surface as the body clears the material in the tank. This flow coat removes any bubbles and foreign particles that may be clinging to the surface. The excess primer applied by the flow nozzles, as well as that accumulated from the dip operation, drains back into the dip tank.

You may be wondering why we apply the prime coat by dipping instead of spraying it. By the dip coating process we are assured of complete coverage over every surface area of the body, including joints, seams, flanges and the closest radii. Following the dip coating operation, a short period of time elapses during which the conveyor line moves the bodies to the prime coat spray booth where a second prime coat is applied.

Second Prime Coat Put on by Automatic and Manual Spraying

Before the bodies enter the downdraft water-wash spray booth, workmen using felt rollers, remove any sags, clinging drops or fat

A car body about to enter the enclosed 6-stage power washer and phosphatizing machine.

MEMO

TO– *All spray phosphating engineers*

SUBJECT– *Precleaning eliminated*

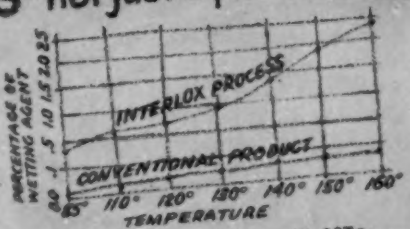
Northwest's Interlox Spray Process now assures high efficiency phosphate coatings, without precleaning, even at low temperatures.

The Interlox Spray Process has proved its superiority through more than three years of research, two years of field testing, in over 100 production installations on everything from auto parts and metal furniture to lighting fixtures and scientific instruments.

A PROCESS–not just a product!

CHECK THESE ADVANTAGES

- ✔ No alkali carry-over.
- ✔ Lower maintenance costs.
- ✔ No loose coating. (white powder or smut).
- ✔ Lower operating temperatures.
- ✔ Fewer plugged nozzles.
- ✔ Less hard scale.
- ✔ No flash rusting.
- ✔ Better smut removal.
- ✔ Less control time required.
- ✔ Complete removal of oxidized oils.



The method is simple, no complicated controls or expensive ingredients. A specially developed neutral cleaner is added DIRECTLY to the phosphate bath in whatever proportion is indicated by requirements. Maximum wetting without foam, is an accomplished fact and a fine-grained phosphate deposit is the result.

Northwest's consulting engineers will gladly survey your operation and submit recommendations. No obligation.

Licensed Manufacturers: ALERT SUPPLY CO. Los Angeles, Calif. • ARMALITE COMPANY, LTD. Toronto, Canada

NORTHWEST CHEMICAL COMPANY

9310 ROSELAWN • DETROIT 4, MICHIGAN

CHEMICAL PRODUCTS DIVISION • CHEMETRON CORPORATION

For more data, circle 170 on colored card.

edges from the lower edges of the body. As each body approaches the automatic spray station, those areas which would be hard to reach and completely cover by automatic spraying are manually sprayed with a gray, epoxy resin primer.

At the automatic spray station the entire outside of the body is given a spray coat of the same gray primer by reciprocating spray guns which are controlled by an electric eye. One automatic spray is mounted overhead and points down; it moves back and forth across the line of travel to spray the top surfaces of each body. The spray cuts off and on automatically at each end of every stroke. Each side of the body is coated by an automatic spray which moves up and down vertically at the side.

The primer is used at a viscosity of 14 seconds at 78° F., as measured in a No. 4 Ford cup. Atomizing pressure is 90-lbs., and fluid pressure on manual spray is 14-lbs.; on the automatic spray, it is 8-lbs. After leaving the automatic spray station the hard-to-reach areas are given a supplemental spray coat of the same primer. There is supplemental manual spraying before and after automatic spraying.

Baking in 3-Zone Oven; Wet Scuffing; Drying

The double prime coat is allowed to flash-off (for evaporation of solvents) for 15 minutes before the bodies enter an indirect gas-fired, 3-zone convection oven where the primer coat is baked for 30 minutes. The first zone temperature is 275° F. and the third is 250° F. Leaving the oven, the bodies cool for ten minutes before all joints and seams are sealed, and sound deadener is sprayed on the underbody and inside the doors. [*To 50*]

Portable air driven discs are used to wet scuff the prime coat on each car body. Water jets are used to keep the metal surfaces wet for this scuffing operation.

FOR BETTER FINISHES... CUT PAINT COSTS PER UNIT NOT PER GALLON

A One-Coat Air-Dry Enamel Endures Rough Service on Allen Storage Racks

Pallet storage racks face a daily barrage of scrapes and scuffs that is hard on any finish. Allen Iron and Steel Company, Norristown, Pa., combats this problem with a fast air-drying Cosden enamel applied in a single coat right to the bare steel. No priming or baking is necessary and the material is versatile enough to be either sprayed or dipped as required.

An Allen executive says: "Ease of application, prompt drying, plus an extremely durable product are most important for our production and handling methods." Our formulating experience met these requirements and added economy, too! It can do the same for your finishing requirements. Write or call us today!

COSDEN PAINT COMPANY

BEVERLY NEW JERSEY

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If any excess sealer material is in evidence, it is wiped off. The bodies then pass under a water spray before they enter the wet scuffing deck. Here portable air-driven discs, fitted with No. 360 wet-or-dry sandpaper, are used to scuff the prime coat. The second gray prime coat serves as a scuffing guide to help workmen avoid cutting through both the brown and gray coats to the bare metal surface.

The bodies are transferred from the overhead monorail conveyor to a truck-floor conveyor to go through the remainder of the system. They move through a vigorous water spray station to wash and rinse all surfaces thoroughly before they enter and travel through a dry-off oven for 25 minutes at 325° F.

As bodies leave the dry-off oven they are allowed to cool for 15 minutes before their surfaces are blown clean with compressed air and further cleaned with tack cloths. Any areas that show excessive cutting through to the original brown primer coat are hand sprayed with gray primer. A spot spray gun is used for this operation. I might add that those areas that require this final supplemental spraying are held down to a minimum in both number and size.

Double Color Coat Sprayed; Baking in 3-Zone Oven

The bodies enter a color coat spray booth which is also of the down-draft water-wash type. This booth has two duplicate automatic spray stations. Each station has one overhead horizontal, reciprocating spray gun and two vertical reciprocating spray guns. With the two duplicate spray stations we ap-

Automobile bodies moving by conveyor through automatic spray painting stations where color coats are applied to the top surfaces and to both sides.

Step-up production line efficiency with

ALEMITE

AIRLESS HYDRASTAT PAINT SYSTEM

Here's fast, economical production-line painting. Rugged, double-acting pump . . . operating from original container . . . provides a continuous even flow of paint, at a constant pressure. It can easily handle two or more spray guns without loss of painting quality or pressure . . . help keep your production line moving at an even, steady speed. Continuous agitation guarantees color uniformity . . . power hoist makes drum changing simple, easy, fast . . . cuts downtime to a minimum. The Alemite hydrastat paint system requires no heat, less air consumption . . . can be used indoors or out . . . is fog-free.

Alemite offers a full line of mobile, portable, and in-place hydrastat spray paint units. **Send for free catalog . . . or contact your Alemite representative.**

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Dept. BQ-81, 1850 Diversey Pkwy., Chicago 14, Ill.

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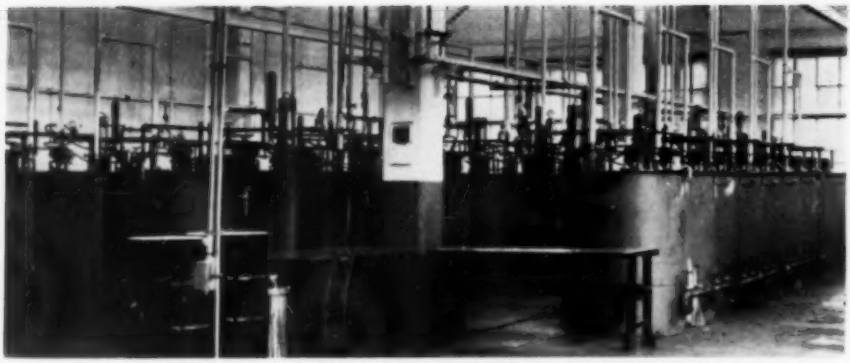

The paint mixing and supply room contains 42 tanks of 150-gallons each. Incoming drums of paint are placed on power rollers and rolled to agitate or "shake up" the paint before it is poured into the mixing tanks next to the supply line tanks.

ply a double wet coat of modified alkyd resin enamel.

Finishes are available in 20 different colors. Color changes are made rapidly and easily. The spray guns are flushed clean with solvent before a new color is started. The use of snap-on couplings helps to speed up the operation. Before the bodies leave the color coat spray booth, operators manually spray a supplemental coat of the same enamel on the hard-to-reach areas.

The finish coat of enamel is baked for 40 minutes in a 3-zone convection oven which is gas fired. In the first zone a temperature of 225° F. is maintained; in the second zone, 230° F.; and in the third zone, 240° F.

Inspection Station; Masking For a Two-Tone Finish

As the bodies leave this color-coat oven they travel to cool before they pass through an inspection station which is brilliantly lighted with banks of fluorescent lights. Those bodies that require a 2-tone finish are switched onto another conveyor system where they are masked with brown paper held in place by masking tape. Then they pass through the 2-tone spray booth where the alternate color is applied. This color coat is baked in the finish-coat bake oven for the same length of time and at the same temperature as the first color coat.

The primer that is applied by spraying, and all top coat enamels are stored in drums in a storage room that is kept at 78° F., the year around. This room adjoins the paint mixing and supply room which contains 42 tanks of 150-gallon capacity each. The paint is pumped through filters into a circulating pipe line system.

J. D. Harris; Body Bros.

Jack D. Harris, formerly with an accounting firm, has been made office manager at Body Bros., Inc. (BoGard Finishes), Bedford, Ohio.

Begin with Plywood...

FINISH with O'BRIEN

The complete O'Brien system authentically reproduces any expensive or exotic wood grain or pattern, in any color, by upgrading low-cost, readily available plywood. The complete process includes:

O'BRIEN FILLERS

for open grained Plywood. These materials produce a hard foundation for successive coats, and lend stability to the wood surface.

O'BRIEN GROUNDCOATS

that offer complete opacity in varying colors and shades to be applied over filled panels. The groundcoat presents a surface designed to accept the graining operation.

O'BRIEN GRAINING INKS

that are formulated in mellow wood tones to reproduce wood grain patterns faithfully. Noted for excellent transfer, permanence, and non-smearing when topcoated.

O'BRIEN TOPCOATS

provide a durable finish with high resistance to solvents, staining, and marking.

COUNT ON THE O'BRIEN PLYWOOD FINISHING SYSTEM FOR TOP-QUALITY PERFORMANCE AND ECONOMY. WRITE US TODAY FOR FULL INFORMATION.

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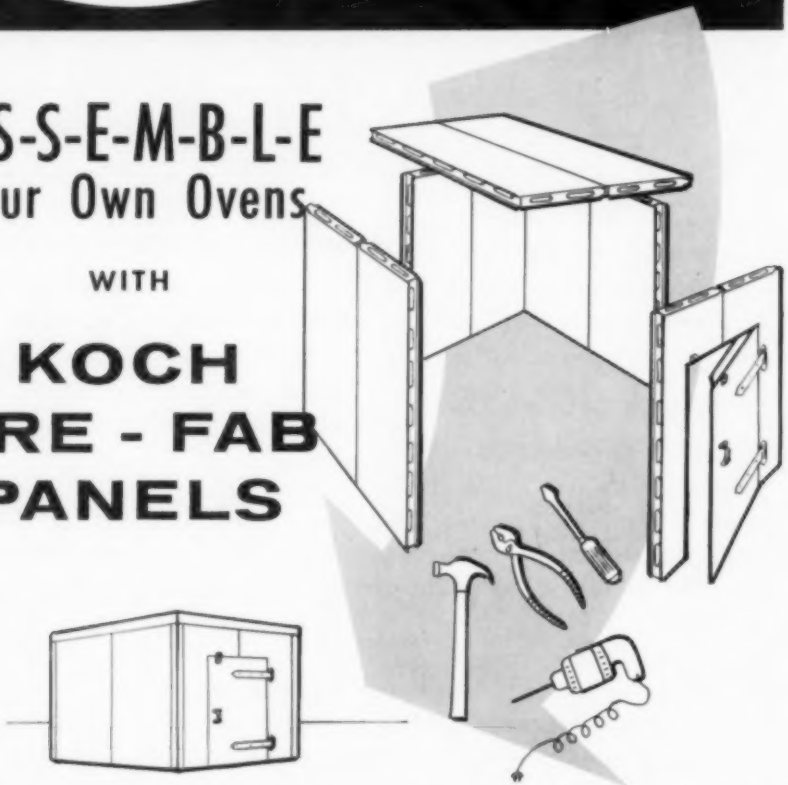
KOCH OVEN PANELS

A-S-S-E-M-B-L-E Your Own Ovens

WITH

KOCH PRE - FAB PANELS



BATCH OVENS • CONVEYOR OVENS • PANELS 3"- 4"- 6" THICK

ACCESSORIES

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- HEATERS -- Gas, Electric, Steam
- FLASHING
- HARDWARE

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THERMAL PRODUCTS DIVISION

GEORGE KOCH SONS INC.

EVANSVILLE 4, INDIANA

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ROCKFORD VARNISH

RV

ROCKFORD, ILLINOIS

BUOY!

It may be just a beach marker, but it *looks* like a buoy; the other article, of course, looks like a girl. On the other hand, when you order R/V "Real Value" Industrial Finishes, there is *no* confusion. Your products will look like you want them to — fine-textured, rich, durable, colorful, brilliant, deep-toned, everything you specify. Let us pilot you toward real satisfaction . . .

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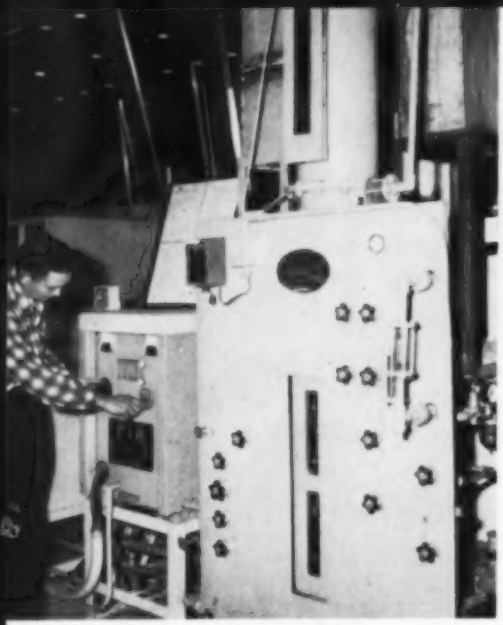


BIG Plant Has a Little Shop for Small Work

BY GILBERT C. CLOSE

Closeup of the water de-ionizer (right) used for makeup water, and the modified constant voltage welder rectifier (left) used to furnish current for the anodic tank.

A MINIATURE fabrication shop which operates independently from the major production shops is producing numerous small sheet metal parts for the DC-8 jet transport airplane at the Long Beach, California, Division of Douglas Aircraft Co. The prime purpose of this little shop is to "short circuit," so to speak, the time, paperwork, scheduling and handling that would be involved in routing these small parts through the major production departments.

Material Racks; Machining; Surface Processing

When a work order is received in "Little Fab," as it is called, the raw sheet stock for the parts is selected from the little shop's own raw material racks. These racks contain sheet stock of different gauges, cut 12x12-in. in size, and usually cut out of scrap from the large sheet metal shops. This is followed by all the necessary machine work on the part, including shearing, forming, drilling, welding, etc.

All of this work is taken care of on the small-sized facilities with which the little shop is equipped. Small extruded parts are handled in the same way and are made from short lengths of extrusions with which Little Fab is stocked.

After the parts are ready and inspected, they proceed immediately into Little Fab's own processing system which consists of nine tanks, each 24-in. wide, 36-in. long, and 24-in. deep, plus the necessary racks and conveyors. The miniature tanks, arranged in a neat row, contain in the order used: 1) Alkaline cleaner; 2) a double rinse; 3) an etch; 4) a double rinse; 5)

anodic solution, or alternately 6) a chromic acid solution; 7) a double rinse; 8) a sealer; and 9) a dip tank with fuel-resistant primer. The "double rinse" means simply that each tank contains two rinse departments for progressive rinsing. Thermocouple-controlled gas tank heaters are used where required.

Only Aluminum is Used; Specifications are Strict

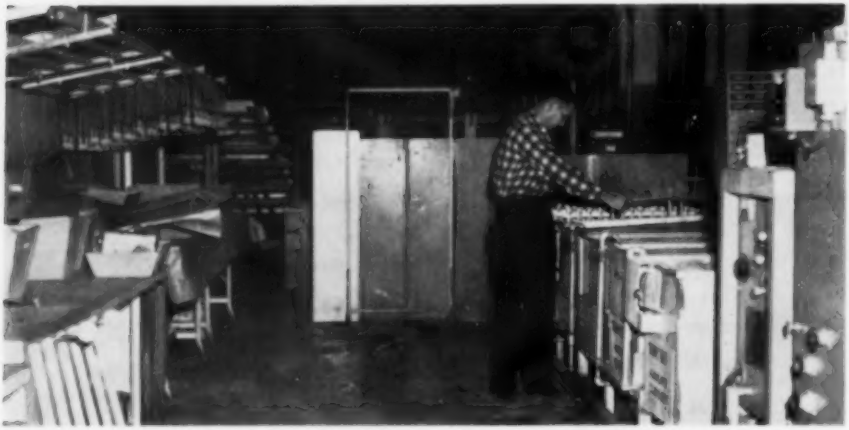
Since Little Fab makes only aluminum parts, progress through the finishing setup is the same for all, except that some parts are anodized while others are chromodized. The little parts are handled by means of small racks with clips which are hand-moved from tank to tank as processing continues. The aluminum racks containing parts to be anodized are equipped with titanium clips as titanium is not affected by the anodic process. After dipping in the fuel-resistant primer, the racked parts are hung on a small storage conveyor and pushed aside to air dry.

Employees keep all small parts together, move the work faster, follow the strict schedules and specifications more efficiently, and these jobs stay away from the slower moving large parts.

Specification requirements, as they pertain to finishing, are just as stringent on these small parts as for larger parts. All solutions are rigorously controlled and maintained by Process Engineering

Photos from Long Beach Division of Douglas Aircraft Company.

In the dip tank section parts are dip-primed and suspended on overhead racks to dry.



General view of "Little Fab's" own processing department. Miniature solution tank setup is at right; dip priming installation is at the left.

laboratory techniques. De-ionized water is used both for make-up and for rinses. A small de-ionizer is located next to the tanks.

Current for the anodic tank is furnished by a modified AC welder rectifier with automatic constant voltage control.

A blueprint is kept on file in the department for all parts to be produced in Little Fab. Thus when an order arrives, work can start immediately and move on without interruption to its finish. Interdepartmental scheduling and handling, along with the necessary paperwork, are entirely eliminated.

Douglas officials point out that parts scheduled for production and finishing in Little Fab can be ready for installation on the airplane in 24 hours. The same parts, routed through the large shops, would take days or weeks for completion.

Silicone Products of G. E. Opens Sales Office in Dayton

The Silicone Products Department of General Electric has opened a new sales office in Dayton, Ohio.

The office is located at 11 W. Monument St., and the telephone number is BAldwin 3-1263. James Hamlin is the sales representative in charge. Mr. Hamlin formerly was located in the company's Cleveland district headquarters office.

In making this announcement, sales manager K. J. Morray said that the establishment of a Dayton office would mean expanded sales coverage and improved service of southern Ohio customers.

These materials are used as electrical insulation, polish additives, textile finishes, paint additives and in numerous other industrial applications.

Cawley, Diversey District Mgr.

R. L. Cawley has been appointed a district manager in The Diversey Corp.'s Southern Pacific Division. Mr. Cawley will supervise Diversey sales and sales promotion in all of Arizona and extreme southern California. He joined the company as a sales representative in 1951.

Result: A big competitive advantage for Insulite Primed Siding

This is what happened when a manufacturer asked Minnesota Paints to help them give a new product some real advantages over competitive items.

The company was Minnesota & Ontario Paper Co. The product was a line of pressed-fiber boards for exterior siding. M&O had developed a way of pre-sealing the boards with a special prime coat.

Minnesota Paints specialists went right to work with formulations developed by Minnesota & Ontario. The result was a tremendously efficient priming process that gave M&O three big sales advantages:

- The factory applied prime coat saves the user both paint and labor in finish painting. One coat finishing is frequently possible.

In test after test, Insulite Primed Siding with just one coat of Minnesota's exterior paint provided a durable long-lasting finish.

- The paint job lasts longer, because the special primer is scientifically applied, and has tremendous adherence qualities.
- The siding boards are safe from moisture damage during shipment and during construction—which can mean huge savings to builders.

Advantages like these can be real profit-builders in any business that uses product finishing. If you use paint and protective coatings, let the man from "Minnesota" go to work for you . . . without charge or obligation. He is backed by a modern technical laboratory fully equipped to meet up-to-date requirements at the factory level. As a result more and more manufacturers are discovering how having the proper finishing here pays off in extra sales. Why not see if Minnesota Paints specialized knowledge can help improve your profit picture.

Minnesota PAINTS

MINNESOTA PAINTS, INC.

Minneapolis 15, Minnesota

Plants: Minneapolis • Fort Wayne • Atlanta • Dallas

Maas & Waldstein Co.; 85 Years Making Industrial Finishes

The Maas & Waldstein Co., Newark, N. J., Chicago and Los Angeles, has built an 85-year reputation on "finishing" what other men start.

Established in 1876 by New York businessmen Adolph Maas, Adolph Magnus and British chemist Dr. Martin L. Waldstein, this company has created no less than 50,000 industrial finishes. . . .

The company's original plant in New Jersey—still in use — was repeatedly enlarged over the first 40 years. By the beginning of World War I, it became apparent that even with enlargements, one plant was inadequate to handle the wartime volume. The company set about building a second plant, in the Port Newark area.

Gustave Klinkenstein

In 1923 the company opened a warehouse, mixing plant and office in Los Angeles, Calif., to service West Coast manufacturers. A year later an office, plant and laboratory were opened in Chicago. In 1939 the company made its first acquisition, the Essex Co. of Newark, producer of industrial finishes.

Six years later, in 1945, Maas & Waldstein Co. made its second acquisition, the Smith-Davis Co., with a complete manufacturing plant in Los Angeles.

Under the leadership of its president, Dr. Gustave Klinkenstein, who joined the company as a chemist in 1916, M & W has pioneered innumerable break-throughs in the field of industrial finishes.

M&W delivery service in the early 1880's.

Maas & Waldstein's success has been founded on a technical sales force that has gone out and found the problems besetting industry, and a research and development staff that has wasted no time solving them.

Solvents & Chemicals Group Distributes Synthetic Resins

The appointment of The Solvents & Chemicals group as distributors of synthetic resins in six locations has been announced by the Pine & Paper Chemicals Dept. of Hercules Powder Co.

The locations are as follows:

Amsco Solvents & Chemicals Co., Cincinnati, Ohio.

Dixie Solvents & Chemicals Co., Louisville, Kentucky.

Hoosier Solvents & Chemicals Corp., Indianapolis, Indiana

Western Solvents & Chemicals Co., Detroit, Michigan.

Texas Solvents & Chemicals Co., Dallas and Houston, Texas

Appointment of these six companies will mean more convenient stock points and better service for customers covered by the group.

Carrique Elected President of M. F. S. A.

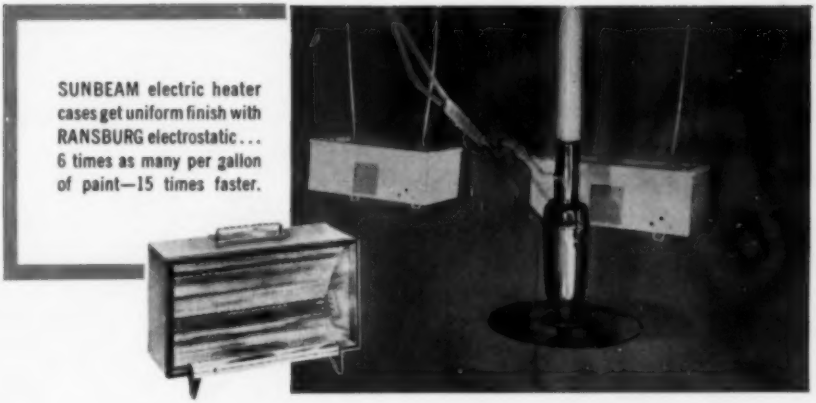
J. G. Carrique, president of Alloycraft, Ltd., Montreal, Canada, was installed as president of the Metal Finishing Suppliers' Association, Inc., at the Annual Meeting of the Association, held June 19 at the Hotel Statler-Hilton, Boston, Mass.

The Metal Finishing Suppliers' Association, Inc., the only trade association of manufacturers and distributors in the finishing industry in the United States and Canada, is now in its 38th year of service to the industry. The Association was incorporated in 1951.

R. B. Cassidy; Allied Research

Allied Research Products, Inc., Baltimore, Md., manufacturer of chemicals, equipment and supplies for metal finishing, has announced the appointment of Mr. Robert B. Cassidy as sales engineer for the southern territory.

From his office, located on Route No. 8, Greenville, Tenn., Mr. Cassidy now serves the states of Tennessee, Alabama, Georgia, Florida, and Mississippi.


SUNBEAM electric heater cases get uniform finish with RANSBURG electrostatic... 6 times as many per gallon of paint—15 times faster.

"Paint Mileage Leaps 500%... Production Upped 15 Times" Reports

ENAMELED STEEL & SIGN CO.

Curt Simmons, President, ENAMELED STEEL & SIGN COMPANY of Chicago, describes results with RANSBURG Automatic No. 2 Process Electro-Spray: "We first painted cases for the new SUNBEAM portable electric heaters with air hand spray at the rate of 200 pieces per day using 6 gallons of paint. Now, with RANSBURG electrostatic we've increased production 1400% to 3000 pieces daily with only 15 gallons of paint." An increase of 500% in paint mileage! *What would savings like this mean in your finishing department?*

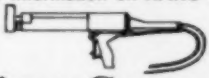
QUALITY IMPROVED WITH RANSBURG ELECTRO-SPRAY

Sags and runs, a problem with the air hand spray, have been eliminated with the automatic electrostatic equipment. Mr. Simmons adds: "Now we achieve a uniformity over the configurated area which wasn't always possible before. We know the 50,000th piece will turn out the same as the first."

ENAMELED STEEL—sold on the efficiency and versatility of RANSBURG Electro-Spray—uses 14 automatic No. 2 Process units to meet the heavy demands of their diversified, high volume production.

NO REASON WHY YOU CAN'T DO IT TOO

Manufacturers—large and small—are reporting similar savings in paint and labor with increased production. If your volume doesn't justify automatic electrostatic equipment, perhaps the RANSBURG electrostatic hand gun will help cut costs in your finishing operation. Write for our new brochure showing actual in-plant production photos, savings figures and detailed information on RANSBURG No. 2 Process Electro-Spray.



RANSBURG

RANSBURG Electro-Coating Corp.

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Sanding the sealer coat. At left is door line; at right cabinets; at center is return line for both doors and cabinets. Doors and cabinets rest on wide belts during this operation.

Compact Finishing Setup For KITCHEN CABINETS

By Bruce Jordan, Plant Superintendent
Haas Cabinet Company*

NO ONE WILL question the fact that the finish on kitchen cabinets plays a big part in dealer and customer acceptance. Design, size and adaptability of the modular units and construction are important to the architect, the builder and the home owner, but the finish must serve two purposes. It must be attractive and durable. An excellent finish enhances the natural beauty of the wood, and it protects all of the wood, including hidden parts, against any possible harm by moisture in one of the steamiest rooms in the house.

We manufacture kitchen cabinets in two finishes, natural birch and cherry birch. Ours is a story of growth. Our transition from a

*Sellersburg, Indiana.

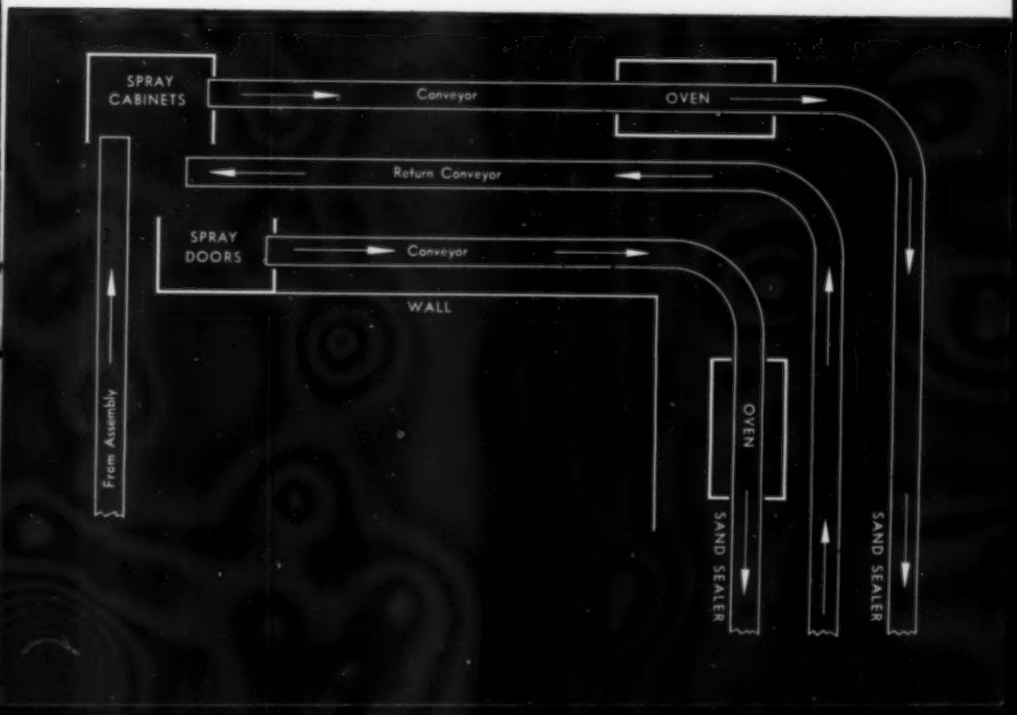
non-conveyorized air-dry finishing room to a conveyorized, force-dry system has more than doubled our production. However, it has also presented a problem in plant space. Thus far we have solved this problem. There is room for improvement and changes will be made as soon as possible.

Conveyors; Infrared Ovens; Hot Lacquers; Air Sanders

As shown in the accompanying drawing, our finishing room is L-shaped and contains three parallel conveyor lines. We have a cabinet line and a door line, and between them a combination cabinet and door return line. The flat top roller-type conveyors are about 30-in. above the floor and are power driven by belts which operate at a speed of 5-ft. per minute. The belts do not extend around the curves. Cabinets and doors move around the curves by gravity.

At the beginning of each finishing line there is a spray booth, and both lines have force-dry ovens. The 80-kw. infrared electric oven for drying the finish on cabinets has four temperature zones and is equipped with automatic time and temperature controls to maintain the desired temperature. The 48-kw. infrared electric oven for drying the finish on doors has two temperature zones and is also

New setup for finishing birch cabinets includes flat-top conveyors, zoned infrared electric drying tunnels and equipment for hot lacquer spraying.



equipped with time and temperature controls.

All birch plywood and solid wood frame parts are sanded before assembly. Then, just before the cabinets and doors arrive in the finishing room, the cabinets are given a final light sanding with portable air sanders, using No. 4/0 sandpaper. The resulting dust is blown off with compressed air guns.

Natural Birch Finish; Sealer; Two Coats of Hot Lacquer

Cabinets to be finished in natural birch are given a spray coat of 21% solids clear lacquer sealer inside and outside. Atomizing pressure is 35-lbs., and fluid pressure is 15-lbs. The sealer does not pass through a paint heater; it is used at room temperature. This coat is allowed to flash-off for six minutes before the cabinets enter an infrared electric force-drying oven in which the sealer coat is dried for 2½ minutes at a surface temperature of 110° F. Leaving the oven, cabinets cool for eight minutes before the sealer coat is lightly sanded inside and outside with portable air-driven sanders, using No. 5/0 sandpaper.

Cabinets are then placed on the common return conveyor. When they arrive, at the spray booth at the beginning of the line, they are given a spray coat of clear lacquer which passes through a paint heater maintained at 110° F. Atomizing pressure is 35-lbs. and fluid pressure is 15-lbs. Again they go through the force-dry oven and then receive a light scuff sanding. Cabinets are returned to the spray booth for the second coat of clear,

At left is door line; next to it is the return line; at right, an infrared oven and the cabinet line. The respective spray booths appear in background.

POLYMAC*

PURE POLYESTER FINISH

OF UNBELIEVABLE BEAUTY AND DURABILITY

1. POLYMAC has been successfully production-tested here and abroad for over three years.
2. As durable and burn-proof as plastic laminate, and at lower cost.
3. POLYMAC can be sprayed or curtain-coated and is print free in 50 minutes.
4. Can be rubbed to mirror-gloss, semi-gloss or dull sheen and has glass-like hardness.
5. Recommended for —
   Table tops — Case goods
   TV-Cabinets — Panels
   Any surface subject to severe usage.

POLYMAC has been tested by an independent laboratory and approved by the Fine Hardwoods Association of Chicago, Illinois, for use with the Finishield Process.

Complete information and data on POLYMAC will be sent on request.

*Mfgd. under license granted by Sonneborn & Rieck, Limited, London, England.

"Eighty-six Years of Service"

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD **PHILADELPHIA 36, PA.**

For more data, circle 178 on colored card.

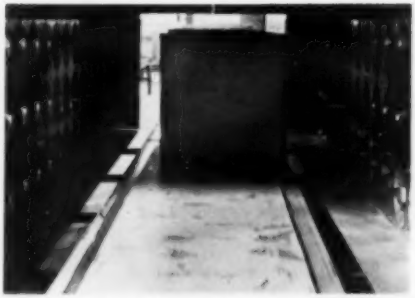
hot lacquer. After a force drying and cooling they are transferred to the assembly line.

Cherry-Birch Finish; Sealer; Tinted Lacquer; Clear Lacquer

Cabinets to be finished in cherry-birch follow exactly the same system as those that are given a natural birch finish, except that instead of the first top coat of clear lacquer, these cabinets receive a toner coat—a 32% solids tinted lacquer which passes through a paint heater set at 110° F. Atomizing pressure is 40-lbs., and fluid pressure is 20-lbs.

We believe in using low atomizing and fluid pressures all of the way through the system, as it reduces spray bounce-back and overspray; it reduces the wastage of material, thus making spray finishing more efficient. The cherry-birch cabinets receive a clear hot lacquer top coat following the application of the lacquer toner coat.

Cabinet doors that are to receive a natural finish are given a coat of 21% clear lacquer sealer on the back or inside and on all four lipped edges. They travel on the conveyor for six minutes to allow solvents to flash off before the sealer is force dried in the infrared electric oven for two minutes at 110° F. After cooling for seven minutes, the sealer coat is sanded with air-driven sanders, using No. 5/0 sandpaper.



View inside 4-zone infrared oven through which cabinets travel to force dry the finish for 2½ minutes at a surface temperature of 110° F. Photo, Dry Clime Lamp Corporation.

Doors are returned on the common return conveyor to the spray booth at the beginning of the line where the outsides of all doors are given a sealer coat. This sealer coat is force dried and sanded, and the doors are returned to the spray booth for their first coat of clear lacquer which passes through a paint heater maintained at 110° F. This coat is applied to the inside of the doors, then force dried and the doors are returned to the booth for first lacquer coat to be applied on their outside surfaces. The same procedure is followed for the second and final coat of lacquer on both sides of the door. Each door makes a total of five trips through the force-dry oven. [*To page 68*]

Cabinet spray booth in corner. Notice the paint heaters at upper right hand side of booth for heating lacquer while spraying. Cabinets arrive on conveyor at left, leave on conveyor at far right, and return on the conveyor in foreground. Photograph, courtesy of Spee-Flo Company.

for a "TIRED" FINISH

When a finish lacks that spark that distinguishes a "go-getter," it's time for a change. In situations like this, many coating users have found that the use of Nacromer in conjunction with their existing coating material is all it takes to put the finish back on the track!

Nacromer adds a sparkle that peps up the finish. It highlights depth and adds richness to otherwise ordinary coatings. Gives your finsh a character all its own.

And, Nacromer is easy to use. It is compatible with most coating vehicles . . . can be applied to practically any material by the usual coating methods. It can do a big job for you.

May we show you how Nacromer can "cure" your "tired" finish?

Nacromer® SYNTHETIC PEARL ESSENCE

FREE NACEROUS PIGMENT HANDBOOK
New edition with 8 pages of valuable information on Natural Pearl Essence and Synthetic Pearl Pigments. Ask for your copy today.

THE MEARL CORPORATION
world's leading producers of pearl essence
41 EAST 42nd STREET, NEW YORK 17, N. Y.

For more data, circle 179 on colored card.

[*Continued from page 66*]

Cherry-Birch Finished Doors

Cabinet doors to be used in cherry-birch finished cabinets follow the same system as the cabinets on which they are to be hung. The first coat of clear lacquer is omitted. Both sides of each door receive a coat of 32% solids tinted lacquer toner which passes through a paint heater set at 110° F. After the final top coat of clear lacquer has been applied and force dried on both sides of the doors, they are transferred to the assembly line.

Graco Holds Ind. Distributor Training School

Another step in a continuing effort to inform its industrial distributor salesmen of the latest developments in Graco industrial equipment and selling techniques was accomplished June 13-15, 1961, by Gray Co., Inc., Minneapolis, Minn.

A major objective of the Minneapolis-held Training School was to provide distributor salesmen with more thorough product knowledge to enable them to better serve the requirements and needs of their customers.

The 25 attending distributor salesmen received detailed information on how to make specific equipment recommendations to meet individual customer needs.

Other Graco equipment demonstrated and used during the three-day training school included: The President and Bulldog Hydra-Spray pumps for "airless" spray painting, Hydra-Clean for power washing, extrusion pumps and circulating and metering systems.

Graco is planning similar training schools for the future to help its distributors provide more complete customer service.

Fuller Paint Factory Opens In Puerto Rico

A new Fuller paint factory has been opened in Bayamon, Puerto Rico. The new factory will be operated by the San Francisco firm's Puerto Rican affiliate, Fuller & Co. (Caribbean) Inc. President of the Puerto Rico company is S. D. Gester, who has served with the parent firm as chemist, technical service expert and industrial sales specialist.

The Fuller factory in Puerto Rico will produce a full line of consumer, industrial and automotive finishes to be marketed in Puerto Rico and elsewhere in the Caribbean.

S. H. Palmer; DuBois Chemicals

Sherman H. Palmer has been appointed Branch Manager of DuBois Chemicals, Inc.'s Dallas plant. Mr. Palmer had been serving as chief chemist at DuBois East Rutherford, N. J., plant since 1958. He joined the company in 1952 as a member of the laboratory staff at the main plant in Cincinnati.

Group discussions during the training school held by the Gray Co. at Minneapolis, Minnesota.

Because...		
	SYNFLEX is lighter	**SYNFLEX** is economical
SYNFLEX is flexible	**SYNFLEX** simplifies	**SYNFLEX**
SYNFLEX is impervious to solvents		
SYNFLEX for hot or cold spraying	**SYNFLEX** gives smooth flow	**SYNFLEX** has high strength
SYNFLEX resists abrasion	**SYNFLEX** has closer tolerances	**SYNFLEX** handles all finishes

PROVEN 30X HOSE

HIGH PRESSURE AIRLESS PAINT HOSE

- lower cost
- static wire
- reusable fittings
- highest burst pressure in airless industry

A-3213A

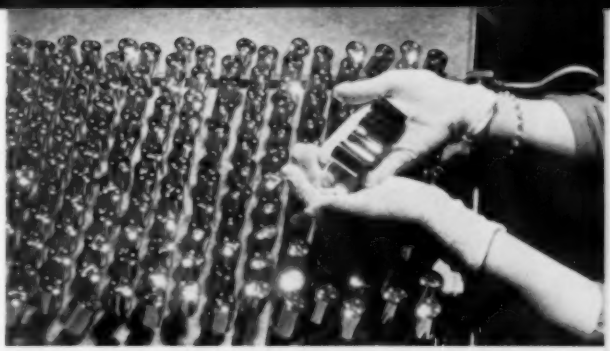
Contact your local paint spray equipment dealer for New Synflex 30X Airless Paint Spray Hose or write direct to us.

SYNFLEX®
Products Div.
Samuel Moore & Co.
Mantua, Ohio

For more data, circle 180 on colored card.

● Before a protective lacquer is applied to the highly polished surfaces, carefully directed lighting points up any minute surface flaws that may be present.

● Two women in foreground inspect caps as they place them on the moving belt leading into lacquer spray booth.



● The brightness of buffed and lacquered containers is checked thoroughly before the carton of caps is cleared for shipment.

Finishing

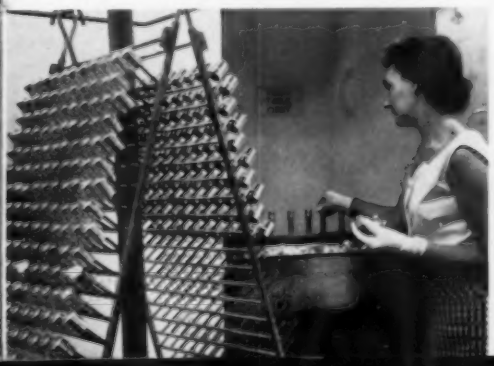
Cosmetic Cases

Risdon Creates High-Style, Quality-Controlled Finishes

COSMETIC cases of fine quality and high style are a major product of The Risdon Mfg. Co., a Connecticut concern that started out as a tool works more than 50 years ago.

With factories in Naugatuck, Danbury and Waterbury, Risdon now is well-known as a fabricator of a variety of close tolerance products made of metal and plastics. The products include small components for other industrial manufacturers, wire specialties for the plumbing, laundry and notions fields, aerosol valves, elegant aerosol dispensers and cosmetic cases for lipstick, eyebrow pencils, rouge and powder.

The cosmetic cases and aerosol dispensers, in addition to having utilitarian purposes, must serve as



Here unpolished brass caps are being placed on a rotating drum, before they move into contact with cloth wheels which buff them with jeweler's rouge. At completion of the buffing cycle, the operator removes the caps and hangs them on the rack at the left. Now a gleaming gold color, the caps are ready to be lacquered.

high-style fashion accessories, complementing wardrobes, purses and perfume trays. To create sleek, dazzling or delicate jewelry-like finishes, many ingenious finishing processes, all of them subject to rigid quality control, are employed.

Engine-turning, lithography, enameling, plating, texturing, lacquering are some of the techniques used to obtain distinctive designs.

From the time a new container design is developed until the product is delivered to the customer, finish is a prime consideration at Risdon. In the accompanying pictures are shown some of the steps the company takes to insure a fine high-quality finish, on a mass production basis.

Nordson Sales Personnel

Kenneth H. Daly, V. P. of Nordson Corp., Amherst, Ohio, manufacturer of airless spray painting equipment, has announced the appointment of new sales managers for two of Nordson's wholly-owned sales subsidiaries.

Lee Bays, formerly Indiana sales-service representative for the company, has been appointed Sales Manager of Nordson Central, Inc., with headquarters in Amherst.

Richard Schafer, formerly Sales Manager of Nordson Central, has been transferred to Nordson Eastern, Inc., Ridgefield, N. J., as Sales Manager.

Richard Schafer and Lee Bays

Bays, a native of Terre Haute, was formerly associated with the Westinghouse Corp.

Schafer, a native of Berea, Ohio, joined Bede Products Inc. about the time that the airless spray system was first introduced, and served with the company until its acquisition by the Nordson interests. He has served as Assistant to President, Eric Nord, and as Sales Manager of Nordson Central, Inc.

Anderson Named by DeSoto

Wallace M. Anderson has been appointed Technical Assistant to the Sales Manager, Paint & Resin Products for DeSoto Chemical Coatings, Inc., Chicago 23, Illinois.

Mr. Anderson has 24 years of experience in paint and coatings chemistry, the last six years of which were with DeSoto. He has been located at DeSoto's Eastern Division (Philadelphia) and at the Central Research Laboratories in Chicago.

In his new capacity, Mr. Anderson will assume responsibility for the coordination of DeSoto's technical research with customer needs from the Sales Management viewpoint. He will be headquartered at DeSoto's Executive Offices in Chicago.

Miller at Standard T Chemical As Laboratory Director

Mr. Edward H. Miller has joined Standard T Chemical Co., Inc., in New York as Laboratory Director of the Eastern Paint Divisions.

Mr. Miller is familiar with modern industrial finishing products, having been chief chemist and technical director over the past 15 years for several major producers of industrial finishes.

Bulletins on Filters

Four new bulletins on its extensive line of filtration equipment have just been published by Industrial Filter & Pump Mfg. Co., 5900 Ogden Ave., Cicero 50, Illinois. This literature gives full details on various types of filters designed and manufactured for industrial processing requirements. Each of the bulletins carries the number of the particular line of filters it describes.

For more data, circle 22 on colored card.

ELECTRIC INFRARED PROCESSING EQUIPMENT NOW PROVIDES TEMPERATURES FROM 1° TO 3000° F. FOR ANY INDUSTRIAL APPLICATION WHERE HEAT IS REQUIRED

The Fostoria Infrared process is partly responsible for the quality built into the products you see here. Its versatility provides economies unheard of in convection heating equipment. Its speed breaks bottlenecks in production techniques. Its flexibility allows adjustment to new conditions with a minimum of effort. If you use heat in your manufacturing process, make a note to check with Fostoria about how to improve product quality with this time-saving, money-saving, labor-saving elecric infrared equipment.

For temperature requirements under 900° F. send for folder "Applications Unlimited."

For temperature requirements from 900° to 3000° F. send for "Breakthrough" folder.

BREAK THROUGH!

FOSTORIA

THE FOSTORIA CORPORATION • FOSTORIA, OHIO

MANUFACTURERS OF ENGINEERED RADIANT ENERGY EQUIPMENT AND CRITICAL WORK AREA LIGHTING

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Filling and Smoothing Metal Surfaces

IT IS NOT sound economics to deliver rough metal to the finishing room and then expect this department to turn out a smooth, high quality finish on metal products. By rough metal I mean that the steel has rough areas when received from the mill, as well as deep scratches from grinding wheels or abrasive belts; also rough welding and dents or scratches from careless handling.

Some products are well suited to the modern textured finishes. In such cases the finish will conceal slight surface imperfections. Textured finishes are often used on typewriters, business machines, sewing machines, water cooler cabinets, etc. However, for other products such as automobiles, refrigerators, washers, dryers, etc., the textured finish is not used. It is for these and similar products that any rough areas on the surface must be smoothed out before any finish materials can be applied.

After the product has gone through the power washer and the phosphatizing machine, a glazing putty is often knifed on and over any rough areas. The object is to use a minimum of glazing putty to cover the abrasive scratches, welds, etc., and to feather out the edge of the putty repair, so it is even with the surrounding smooth surface areas. This surface repair material is generally an air-dry putty that dries sufficiently in approximately ten minutes so that the prime coat can be applied. After the prime coat has been baked the entire surface is wet sanded. Obviously it is important that only sufficient putty be applied to the rough areas, and that the edges be carefully feathered out.

— of PRIME Consideration!!

If you finish . . .

AIR CONDITIONERS
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ELECTRONIC DEVICES
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and need excellent adhesion to Aluminum, Magnesium, Cadmium, or Stainless, TRY . . . . . .

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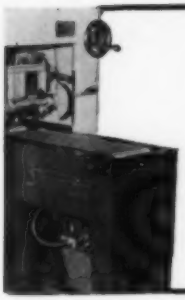

Chosen by 18 Coating Labs . . .

Steinemann *Pressure Curtain* **COATER**

Yes, 13 paint, 5 hot melt suppliers, selected Steinemann for research and sales. The reason—more Steinemanns are in use than all others combined, and Steinemann operates with exclusive *pressure curtain* and gravity curtain. This lab versatility is significant. Now, Steinemann is even better—with completely redesigned lab and production machines.

wilco machine works, inc.

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When castings are used and where a smooth high-gloss finish is desired, it is necessary to putty glaze the rough or porous areas of the castings. Generally a different type of putty is used than that employed for filling deep scratches or smoothing out rough places in sheet steel surfaces.

Putty for castings may be applied either by knifing it on, or it can be worked in or padded-in with a flexible leather pad by hand. Here again, an excess of putty is undesirable. Use only enough to do the smoothing job.

After application it is necessary to bake this putty coating at the heat and length of time specified by the manufacturer. When castings have cooled, the glazed areas are dry sanded (or scuffed if you prefer that word), inspected and tack-ragged before the prime coat is applied. Following baking of the prime coat the surface must be again sanded smooth and tack-ragged before application of the finish coats.—*J. M.*

Sales specifications for the use and limitations of products are important. If they are too liberal, or based on invalid experiences, failures will occur in the field, with the inevitable return of goods and loss of customers.

MORSE VERTICAL DRUM TRUCK **ROCK-A-DRUM**

Picks up 55-gal. drums, rolls them over for side draining. Becomes a rugged stand on 3-in. wheels.

Morse Mfg. Co., Inc. 763 W. Manlius Street E. Syracuse, New York

For more data, circle 239 on colored card.

Missar Appointed by DeSoto

R. R. Missar has been named Product Manager of Metal Decorating & Coil Coatings by DeSoto Chemical Coatings, Inc., Chicago 23, Illinois.

Missar has been with DeSoto since 1947, serving in a number of technical and sales positions. Most recently he was a Technical Service Representative at DeSoto's Illinois Division in Chicago working with Container & Coil Coating accounts.

In his new capacity, he will coordinate all of DeSoto's technical and marketing activities in the areas of Metal Decorating & Coil Coating. He will now be located at the Company's Executive Offices in Chicago.

The Sparkling Sales Look

of Du Pont

DULUX® 100 ENAMEL

holds its lustre longer

Leading, sales-conscious manufacturers of vending machines specify Du Pont "Dulux" 100 Enamel. And with good reason. This dependable finish has a *balance* of properties that keeps products looking their appealing best ■ By actual test, "Dulux" 100 holds its luster 3 times longer than former outside enamels. It is non-bleeding . . . resists blistering, chipping and cracking despite hard wear and temperature extremes. After 18 to 24 months' exposure in a Florida Test Farm, "Dulux" 100 showed no more chalking than many conventional enamels at 6 to 8

months! ■ "Dulux" handles well on the line and is much harder and tougher after baking than conventional enamels. This makes the finished product much less likely to be marred on the production line, in transit or in the user's hands.

Get full details on "Dulux" 100 from your Du Pont Representative, or write: E. I. du Pont de Nemours & Co. (Inc.), 2502 Nemours Bldg., Wilmington 98, Del.

DU PONT INDUSTRIAL FINISHES

DU PONT

Better Things for Better Living...*through Chemistry*

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EDITORIALS

Do Employees Understand Fire Hazards And Dangers?

★ There are two methods the finisher foreman may use to get across his ideas on fire prevention and fire fighting.

The first is regular instruction—telling workers the basic facts in the hope that they will finally be absorbed. Every foreman understands how to do that, although not all will be equally effective.

The other method, perhaps less fully understood, consists of asking questions. Instead of informing employees how to prevent and curb fire losses in the finishing department, the foreman spends more time inquiring what his men think of the situation.

Results may be startling. Based on his findings, the foreman may discover that his former methods have been so inefficient and ineffective as to demand a quick improvement. A few questions may bring out how little the men really understand about fire prevention and fire fighting even if the foreman thought, "they looked like they knew what I was trying to get across."

Sincere questions, properly timed, can be a source of new suggestions. Regardless of how carefully the foreman has been trained in fire prevention and control, he doesn't know it all. Original thinking on the part of employees can add to the total of knowledge on this subject, and what they say will help the foreman to retain (or perhaps regain) his perspective.

Above all, intelligent questioning is likely to disclose weak spots in the worker's mental preparation of what he would do in case of fire. If he is not clear on every detail, or if he has misconceptions about any part of the fire problem, it is important to straighten out his thinking without delay. But until questions bring out these points, some men may have wrong ideas that could add to the dangers present in an emergency. Root out these problems, while there is time: there won't be time after disaster strikes.—*George M. Dodson.*

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

Which? The Consultant or Your Top Accountant?

★ Who is better qualified to advise top management, the consultant or the accountant? Because of the nature of their work, many times both claim the right to move into each others territory, and they attempt to justify this intrusion.

A consultant claims to have greater experience in aiding top management in such things as executive appraisal, personnel training, production, processing procedures, engineering, efficiency, etc. An accountant, pointing to a more or less constant relationship with management and a better knowledge of finances of the business, often climbs over into the fringe areas of certain things as production, laying out and building new plants, sales and marketing, etc.

It is always wrong to generalize. Undoubtedly there are areas where both the consultant and the accountant are highly qualified. The consultant, by training and experience, is better qualified to make the management decisions. Likewise, the accountant, because of his familiarity with the finances of the company is better qualified to handle the finances and to advise management of the financial decisions.

There are broad areas between financial and management decisions. It is up to top management to decide where the boundary line crosses between the accountant and the consultant. Management must guard that boundary line with a firm hand.

The expert who tries to cover too much ground not only creates friction within an organization, but he also ceases to be an expert.—*Mr. X.*

Insist on All-Over Safety; Accidents Are Expensive

In most plants the management is interested in the safety of its workers and the prevention of accidents. The National Safety Council calls attention to some of the dangers of faulty clothing worn by workers.

Soiled garments can cause skin irritations or infect a minor cut, abrasion or burn. Missing buttons, tears or rips can cause a sleeve or a strip of cloth to hang loose to be caught in moving machinery, resulting in the loss of an arm or leg, or even worse. Cuffs on trousers may catch on projections and cause crippling falls. Oil or solvent-soaked clothing or aprons can cause skin irritations and can easily lead to serious or fatal burns. Pocket flaps, dangling ties and loose apron strings are to be avoided as they could get caught in moving conveyors or machines.

Still on the subject of safety, aisles should be kept clear of any protruding objects. Stairwells should be painted white and well lighted. If the stair treads are concrete, a 1-in. painted stripe of a sharply contrasting color will clearly define the front edge of the treads and many prevent a serious fall.

Remember, an accident is not only painful to whoever is injured, but it often removes, temporarily, a good worker from the organization.

Creative Thinking Sells More Materials

★ Today, throughout the industrial finishes industry, I believe that there is a lack of creative thinking. This, I think, is true from the raw material chemist on down through the paint formulating chemist, the salesman who sells coatings, and finally to the finisher who applies the material.

To explain what I mean by creative thinking, let us take a typical finishes salesman who calls on a metal-working plant that is currently using lacquer. Let's suppose that he induces them to change to a synthetic type of clear coating material. What has he accomplished? Well, he got an order and his sales commissions have been enhanced but, in the long term picture, will he be able to main-

tain it? He has merely induced a concern to change from one coating material to another. He has not increased the overall sales of industrial finishes. If the industry in general is to expand to accommodate the increased competitive effort, then new fields must be conquered. New uses for coatings must be found rather than merely substituting one type of coating for another.

In one plant, for example, a finisher was able to introduce an organic coating where none had been used previously; he saved his firm thousands of dollars. This particular plant gold-plated small parts on a continuous line operation. The gold, however, was required only on a portion where electrical contact was the vital consideration. By applying a decorative enamel which prevented unnecessary expensive gold plating, not only did savings accrue by reduced gold consumption, but the small parts were actually more attractive.

The foregoing example illustrates a simple possibility, but there are many other places where the use of organic coatings will produce costs savings. Certainly not all of the problems of durability and corrosion prevention have been solved. What of insulating applications using aluminum pigmented coatings?

Often a finishes salesman will pass up a call because he cannot see where the concern could use an industrial coating. Well, they may not be using any coating materials now but that does not rule out the possibility that a material for some specific use could not fit into their picture and create a new and additional use for lacquers or enamels.

Often a chemist in either the raw material supplier's laboratory or the paint manufacturer's laboratory can be in a position to create a material or coating which will stimulate the thoughts of an alert imaginative salesman. The industry needs new ideas and new uses for finishes. This is what I mean by creative thinking. If we in the industry are to enhance our own position, the industry as a whole must maintain its rate of growth in keeping with the economy and the technological space age in which we live.—*Joseph G.*

New Formula Materials Must Be Easy to Apply

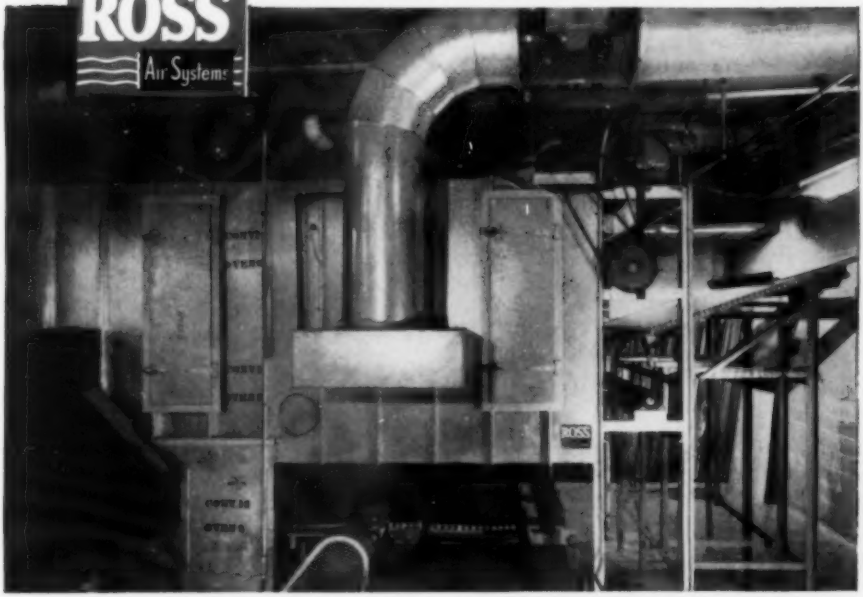
★ Some of the companies who develop and offer new resins for industrial finishes seem to know little about the application of finishes—or perhaps it is not so much a lack of knowledge as it is a lack of interest in easy application and handling properties.

It is all very well to try to make a resin with outstanding adhesion, or some other highly desirable property or combination of properties, such as chemical resistance, weather resistance, extreme flexibility, or exceptional gloss. If the new material is tricky to handle in the finishing department, the customer may settle for a finish that is not quite as good in one or two properties, but easier to handle.

Coatings with exceptional properties generally are on the expensive side. A certain number of potential customers are lost because of this. Poor handling characteristics cause the loss of other potential customers. Some of the undesirable characteristics that may be found are excessive baking schedules, low solids at application viscosity, poor gloss, poor wetting of pigments, poor solubility, lack of stability, poor spray properties (such as webbing, bubbles in the wet film, or a tendency to sag), hard settling and poor flowout. Sometimes the fault can be overcome by formulation, but sometimes not. Sometimes it is

ROSS Air Systems

Engineered Atmospheres for Better Processing



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Two Engineering Innovations Highlight This Plywood Finishing System

FAST DRYING – Application of high velocity drying to plywood finishing for the first time, saving in drying time up to 50%.

COMPACTNESS – All equipment and operation for a multi-color plywood line are within a floor area 115 x 128 ft. The high velocity dryer multi-deck drying units and ingenious arrangement of conveyors and transfers help to make this compactness possible.

Ask to have one of our engineers drop in and describe the Ross ovens, dryers, controls and handling equipment which are incorporated in the United States Plywood Finishing Line at Orangeburg, S. C. This installation is an outstanding example of the work done by Ross Engineers in the important field of 'Engineered Atmospheres,' the basic principle in back of all industrial drying, baking and curing.

J. O. ROSS

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M-R

For more data, circle 185 on colored card.

the formulator who goes all out for one property and ends up with a finish that is difficult to handle.

It may sound reasonable, for example, to say: "Instead of putting one coat of your present finish on your product, apply two coats of our new finish, and you will get better protection, toughness and gloss retention."

The customer will think of the extra expense, how he will have to rearrange his finishing line, the slowdown in production, etc., and very likely he will not be sold. He will keep what he has or find some new one-coat finish that he can substitute for the old.

I think that often it would be better for resin manufacturers and formulators to not aim for the ultimate in some one property at the sacrifice of easy application. They might find that a compromise resin or formulation would sell just as well or better than the other.—*Dan Gross.*

What Makes Problems? Who's to Blame?

If a man from outer space suddenly appeared and could be given an intensive training course in our modern methods and facilities for finishing products, he would surely be well impressed. With our wonderful research and testing laboratories, our engineers and chemists, our manufacturers of equipment and materials, and their trained representatives, he would probably conclude that users of paint materials and finishing equipment could have no problems. Everything should run perfectly at predetermined schedules. Cleanliness, good housekeeping, beautifully finished products, no wastefulness, no rejects, and everything that's just right should prevail.

What a shocking surprise he would get to learn about all of the things that go wrong—faulty coatings, rejects, interruptions in production, difficulties in obtaining satisfactory results, and mishaps of various kinds.

"Why?", we imagine he would exclaim in amazement, "You have everything that's so highly developed to work with, so perfect for what it's designed to do; and you have trained engineers, instructors, service men and unlimited sources of information, yet you appear to have so many difficulties and seemingly useless expense in turning out not perfect but just acceptably finished products. Why is it? I can't understand."

Well, Mr. Space Man, we often wonder about this ourselves. We have given it a lot of thought. True, we have available everything of excellent quality to work with but still we are plagued with problems, troubles and headaches in our finishing and painting departments. A friend of ours—a brilliant individual who has had 25 years experience with various coating problems on a really big scale—declares that 99% of the troubles are, as he calls it "people problems." It isn't the equipment, accessories or the finishing materials; or the testing and measuring devices.

It is the people who manage manufacturing plants and the personnel who design products, select the materials and facilities to use; those who store, handle, prepare, apply and attend to the drying of finishing materials; those responsible for the selection, location, setting-up, operation, maintenance, servicing, cleanliness and safety of all equipment; and those who have anything to do with the choice, use and upkeep of various testing and measuring devices. And let's not forget the filtering of compressed air and ventilation air; and adequate ventilation and proper temperature in the finishing room; the

Self-spray paint troubles stop here

This is part of Sprayon's quality-control laboratory, where six full-time chemists and paint technicians make sure that your aerosol finishes—custom-loaded by Sprayon—never vary in color or performance. Before production begins, even on a routine re-order, prototype cans are made up in the laboratory and given an accelerated aging test equal to a year of shelf life. Test panels are then sprayed and the film is analyzed by precision instruments. Gloss and other characteristics are checked. Color is double-checked under a MacBeth light, the accepted standard of the paint industry. The spray pattern and the mechanical efficiency of the container are checked. All test data, materials and samples are dated, coded and filed for a year for later reference. Sprayon quality control is one reason why Sprayon has handled the greatest possible variety of contract-loading assignments for many of the nation's largest manufacturers—year after year after year. Get the full Sprayon story today.

SPRAYON PRODUCTS, INC. 2065 E. 65th St., Cleveland 3, Ohio

For more data, circle 186 on colored card.

pressurizing of the finishing room to keep out dust; the cleaning and proper treatment of surfaces to be coated; the use of the right kind of masks, where needed—and 10,000 other things—important but often neglected, treated with indifference or just forgotten.

"We want what's best for producing uniformly high quality finishing in the volume we need, and doing it continuously." This is a better and safer rule to follow that such fallacious thinking and acting as, "What's the cheapest we can get by with?", "Well, that's good enough"; "We can cut corners here and do it faster"; "Let that go today, we will do it later"; "We can't afford modern equipment"; "Cleaning is just a waste of time and money"; and so on.

You have heard these statements or variations of them—and others too. Perhaps you have made some of them yourself. Maybe there seemed to be reasonable justification for that kind of thinking at the time. But right there you planted seed which eventually will develop into some one or more of the troubles, problems or headaches about which so many of us complain. You have unwittingly invited Mr. Trouble to come in and he has proved to be a very unwelcome and expensive guest. Yes, Mr. Space Man, this is why, with all of our excellent facilities, methods and information, we do not always get the wonderful results you expected.

Korte, Chief Chemist at DuBois, Is Moved to N. J. Plant

Elmer C. Korte has been appointed Chief Chemist of DuBois Chemicals, Inc.'s East Rutherford, N. J., plant. Mr. Korte had been serving as chief chemist of the company's main service laboratory. He joined DuBois in 1958 in the research laboratory in Cincinnati. Prior to joining DuBois, Mr. Korte was associated with two other concerns.

Adhesion Promotors Can Be Useful

★ I suppose that many or most of the companies using industrial finishes have never head of adhesion promoters. Generally they do not need them. Industrial finishes are meant to adhere to the surfaces to which they are applied. Sometimes a primer or wash primer is put on first, if the topcoat will not adhere by itself. Adhesion promotors are applied at low solids—perhaps 2% solids. The solids content may be only one-half of 1%—or it may be as much as 5%. Generally only a very thin film is wanted. Too heavy a film may harm rather than help. The topcoat is applied over the adhesion promotor.

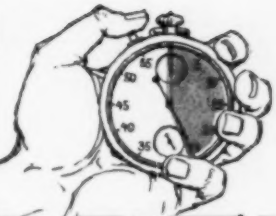
Organic titanate esters are one type of adhesion promotor. There are a number of these. They will adhere, in some degree, to almost every surface that has a few polar groupings. Usually they are used in anhydrous solvents. Water in the solvent or even too high a humidity will cause trouble. The dilute solution of the organic titanate is applied to the surface to be coated. Its solvent evaporates and the organic titanate ester hydrolyzes to give a very thin, clear, continuous, adherent film of titanium dioxide. Titanium chelated esters are also used. These form stable solutions in water under acid conditions.

Another adhesion promotor is an amino-functional silane. This material is used primarily to bond organic materials to inorganic materials. It is used as a fresh dilute solution in water, as it polymerizes on standing.

Often a resin or other material is added to an adhesion promotor. These materials have to be formulated for individual uses just as industrial finishes are.

Adhesion promotors are used in specialized applications. Some of the

FAST STRIPPERS



- ✓ **FAST, CLEAN WORKING**...unlike caustics or strong acids, these strippers do not dissolve or decompose enamel or lacquer. These strippers break the bond between the metal and the organic coating. Loosened coating then slips off in sheets or shreds.
- ✓ **NON-CORRODING**...our strippers do not attack aluminum, zinc, ferrous metals or any other metal or alloy.
- ✓ **CONVENIENT**...stripped metal may be rinsed with water, dried and refinished immediately.

LEA COLDSTRIP

1. Requires no dilution. Use full strength.
2. No heating required. Use at room temperature.
3. Although toxicity is low, care should be taken to avoid contact with the skin.
4. Minimum ventilation required.
5. Can be strained for continued use.
6. Surface of Coldstrip is self-sealing (reduces evaporation).

LEA SYNSTRIP

1. May or may not be diluted with water, depending upon the film adherence.

Maximum dilution should be 1 part Synstrip to 6 parts water.

2. Can be used cold or heated. Heating to temperature from 160° to 200°F. cuts stripping time.
3. Toxic. Avoid inhaling or contact with skin.
4. Heated solution requires ventilation to remove fumes.
5. Can be strained for continued use.
6. Evaporated water should be replaced to maintain concentration. Baumé readings on a hydrometer will determine the amount of water to add.

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Lea Mfg. Co. of Can., Ltd., 1236 Birchmount Rd., Scarborough, Ont., Can.
Lea Mfg. Co. of England, Ltd., Rock Terrace, Buxton, Derbyshire, England
Lea-Ronal, Inc., Main Office & Lab.: 130-19 180th St., Jamaica 34, N. Y.
Manufacturing Plant: 235 East Aurora St., Waterbury 20, Conn.

For more data, circle 187 on colored card.

uses would be in the industrial finishes field. They are also used in the textile field, in adhesive work, and in laminations. Often they are used on flexible substrates. One well known use is as a primer on various films that will have polyethylene extruded on them. Adhesion promotors are sometimes used to coat finishes when a new topcoat is to be applied over them.

As they become better known, adhesion promotors will undoubtedly be used more widely in the industrial finishes field.—*E. Gordon.*

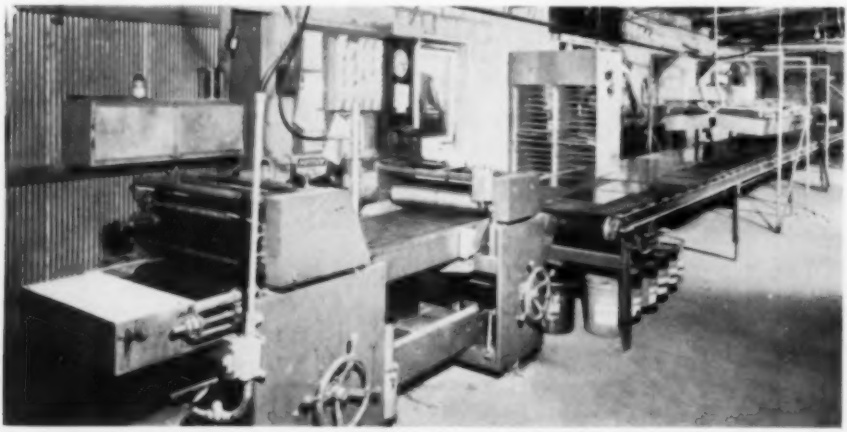
Roller Coater Finishes Cabinet Doors

A 300% production increase in finishing kitchen cabinet doors was made possible at the United Cabinet Corp., Celestine, Ind., by the installation of a combination precision coater and double roller coater, according to S. G. Krempp, President. The combination coater applies precision stain and two coats of sealer in one operation.

The machine was installed recently in order to overcome a bottleneck in door finishing which was hampering scheduled production increases. In addition to the increased production, the precision coater gives a depth and uniformity in the stain application that could not be duplicated with the former method of applying NGR stain, Mr. Krempp said.

On the finishing line the doors pass through the precision coater and the double roller coater in seconds. After passing through the double roller coater, they are carried on the drying conveyor for a 3-minute flash-off period, through an infrared oven for two minutes, then three minutes for cooling. When the doors reach the end of the drying conveyor, they are ready for sealer sanding.

When applying the finish coats the operator raises the precision coater so that the doors will pass through the double coater only. United Cabinet has found that using a synthetic varnish for both the sealer coats and the top coats eliminates the necessity of changing materials in the double roller coater, or of having a separate machine for sealer and top coat.—*J. J.*



This setup, with belt conveyors moving from left to right, applies stain, sealer and top coat.

Cook's is part of the **argus** picture

Argus optical and engineering excellence have become a tradition in American photography. And Argus quality is further reflected in the trim, clean styling of these products.

Cook's contributes to this eye-appeal—with industrial finishes used inside and outside Argus cameras and projectors.

What about your product? Maybe Cook's Industrial Finishes can enhance its buy-appeal, with a better coat of beauty and protection. And give you important production economies as well.

COOK'S PAINTS

Cook Paint & Varnish Company
Kansas City, Missouri
Factories:

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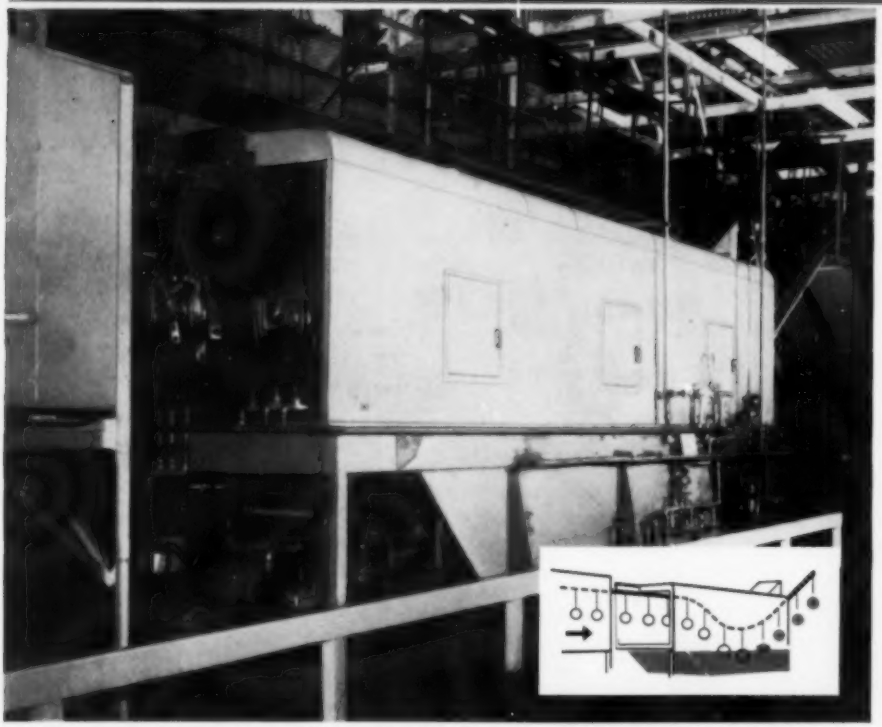
DUPONT TRICLENE® FINISHING NEWS



As shown, auto parts on a monorail conveyor are hot dip painted at Ford's Sterling, Michigan, plant.

Ford Motor Co. uses nonflammable "Triclene" Painting—saves space, time, money—can finish 24,000 parts per day

The Ford Motor Company wanted a safe, nonflammable, production-line method of painting front-end suspensions. The answer was the Du Pont "Triclene" Painting Process. This installation has been in operation for 4 years!

Because "Triclene" is nonflammable, fire hazard was reduced, and saved Ford Motor Company the cost of additional fire-protection equipment. Because parts emerge dry, no costly drying ovens or drip areas were required, which also resulted in substantial floor-space savings.

Quality production is maintained at a high level. Parts can move through the paint unit in one minute at a rate of over 2,000 an hour: 24,000 a day. They dry almost at once, leaving a paint film of excellent coverage and uniformity. Parts are immediately packed and shipped to the assembly plant.

"TRICLENE" Finishing is a revolutionary new way to finish metals. Clean, phosphatize and dip or spray paint continuously in a single medium of nonflammable "Triclene"® trichlorethylene. Use processes singly or in combination to suit any metal finishing need.

Check these important advantages of "TRICLENE" Painting

- ***NONFLAMMABLE.*** "Triclene"-thinned paints increase safety . . . minimize fire hazards. Need for expensive fire-protection equipment is eliminated, and insurance premiums are often reduced.

- ***SAVES SPACE.*** No drying ovens needed where lacquer-type paints are used. Drip pans aren't required, either. "Triclene" Painting installations generally require less than half the space required by conventional methods of production-line painting.

- ***ECONOMICAL.*** No overspray or drip losses means that all paint bought is used effectively. This can cut operating costs as much as 30%.

- ***VERSATILE.*** "Triclene" method of painting can be done by hot dip or spray-in-vapor cycles. Method can be combined readily with "Triclene" Vapor Degreasing and/or Phosphatizing Processes.

DU PONT
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BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Consult these manufacturers for "Triclene" thinned paints

Paint manufacturers listed below offer "Triclene" thinned paints for use in Du Pont "Triclene" painting systems. Contact the one nearest you for further information or send the coupon below for details.

Allied Materials Corporation	Detroit, Mich.
Allerton Chemical Company	East Rochester, N. Y.
American-Marietta Company The Arco Division	Chicago, Ill.
American-Marietta Corporation	Cleveland, Ohio
Armstrong Paint & Varnish Works, Inc.	Chicago, Ill.
Baltimore Paint & Chemical Corp.	Baltimore, Md.
The R. A. Becker Company	Cincinnati, Ohio
Boydell Brothers Company	Detroit, Mich.
Bradley & Vrooman Company	Chicago, Ill.
Dibble Color Company	Detroit, Mich.
Felton Sibley & Company Finishes Division	Philadelphia, Pa.
E. I. du Pont de Nemours & Co. (Inc.)	Wilmington, Del.
Frost Paint and Oil Company	Minneapolis, Minn.
Hanna Paint Manufacturing Co.	Columbus, Ohio
Jamestown Paint & Varnish Co.	Jamestown, Pa.
Lacquer Products, Inc.	Cleveland, Ohio
Maas & Waldstein Company	Newark, N. J.
Midland Industrial Finishes Co.	Waukegan, Ill.
The O'Brien Corporation	South Bend, Ind.
Pontiac Varnish Company	Pontiac, Mich.
Pratt & Lambert, Inc.	Buffalo, N. Y.
Rinshed-Mason Company	Detroit, Mich.
The Sherwin-Williams Company	Cleveland, Ohio
Smith Davis Company	Los Angeles, Calif.
Tousey Varnish Company	Chicago, Ill.
Varnish Products Company	Cleveland, Ohio
Wyandotte Paint Products Co.	Wyandotte, Mich.
Wyco Paint & Chemical Co.	Birmingham, Mich.

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department
Chlorine Products Division
Wilmington 98, Delaware

☐ Please send literature on "Triclene" painting.
☐ Please send us details on how we can begin an evaluation program on trichlorethylene painting. We are now painting_____

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Position_____

Company_____

Address_____

City_____ State_____

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NEW H.S.R. SYSTEM*
(HI-SOL Reducer)

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up to 1/3
of your
TOTAL
PAINT
COSTS

RESULTS PROVED

Actual in-use tests in customers' plants and by an independent testing laboratory (names on request) prove savings up to ⅓ of total paint bill. Best of all, finish quality is improved and the required mil thickness fully maintained.

*H.S.R. (HI-SOL Reducer) System uses a unique solvent blend formulated to work at low air pressure which puts more paint on the product.

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POTTER Paint Co. Inc.
Cortland 1, New York
or Cambridge City 1, Indiana
Write to your nearest location.

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More About Glazing

REFERRING to the article "Glazes and Glazing in Furniture Fnishing," by Harold Shaver (June issue, pages 50-56), it is gratifying to see a renewed interest in wood finishing glazes and the glazing technique. Mr. Harold Shaver is to be complimented for his concise analysis of a situation that deals with one of the "lost arts" in furniture finishing. . . .

Where the technique of hand glazing is unfamiliar, the finisher relies mainly on "packaged" glazes and the somewhat brief instructions for proper application and handling. Whether or not human imagination and artistic perception enter the picture will depend upon the finisher.

It is not enough to merely know what glazing can do for your finish. The true art of skillful and effective glazing is the property of a personality who is endowed with certain artistic instincts. It cannot be instilled in the mind of an unreceptive individual, but it can be developed in anyone who shows a latent instinct for artistic performance.

Descriptions of various techniques, as well as the relating of experiences with glazing, still fail to obviate the intrinsic prerequisite for "feel." "Feel" can be described as the degree of skill one employs in removing excess glaze and in arranging the remainder of the color in such a way as to enhance the wood pattern and lend depth or highlighting to the basic color.

Glazes can be compounded of nearly any drying liquid that will tolerate color. Japan colors suspended in turpentine and tempered with drying oils are popularly used, as well as oil colors tempered with driers. In each case—and depending upon conditions—binders, driers, oils, etc., will vary in the formulation. Surface preparation also dictates the formulation of

the glazer's "home brew," for many finishers do not use sanding sealers and will glaze over the stain on certain woods.

Many good effects have been obtained on water stained walnut, for example, where glazes have been applied over the stain without any intervening coat other than the wash coat. A finely sanded, glue-sized surface will not present any obstructing fibers. Needless to say, experience and discretion should be exercised before you start experimenting. However, certain desirable effects can be obtained when you glaze without an intervening coat of sealer.

The wiping off is not as simple as it sounds, for herein lies the secret for obtaining the desired effect. For production purposes, it may well be that the glaze could be sprayed on and then wiped off much like removing excess filler. A brush would then be used to "feather off" and provide the highlights. In this case, the "packaged" glaze will suit the purpose and an ordinary 4-in. wall brush

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of hog bristle should complete the operation.

The "feel" that is needed to produce a skilled glazing job can be described as that same "feel" that is required in "French polishing." As in French polishing, where the liquid coating is likewise tempered and controlled by the applicator, the "feel" of the glaze guides the glazer. All of the glaze is never removed, since a certain amount must remain to provide lubrication for the blender. The skilled glazer balances off by imparting a subtle hint of brush marks. This does not mean leaving obvious brush streaks. If there is no trace of hand finishing, then the entire effect is lost.

Where the packaged glaze is used, the glazer will temper the glaze according to prevailing conditions affected by atmosphere, temperature, production requirements, etc. Unless it is strictly a "spray on, wipe off, and fast brush operation," I have not found any commercial glaze that does not require careful control. There is no great degree of skill required to handle the prepared glaze, since the human element has been considered in the formulation. You are not expected to perform any tricks with it, nor is it expected to enable you to produce any dazzling effects. Where hand glazing is fairly recent, your best bet is to rely on your coating supplier to provide you with a glaze and instructions on how to use it.

Whatever are the pros and cons regarding glazes and the glazing technique, don't attempt to assimilate them into a finishing schedule. There are too many factors involved, especially the human element. If you are going in for hand glazing, start fresh without any undue influence from

other sources, and confine your efforts to your own conditions. Hand glazing will make an obvious difference and doing it imparts a certain sense of pride and accomplishment on the part of the finisher.—*Herman.*

Minnesota Paints Names District Sales Manager

Geo. W. Sweets has been appointed to the post of District Sales Manager for the Southeast District of Minnesota Paints, Inc., 1101 Third St., S., Minneapolis 15, Minnesota.

Sweets joined Minnesota Paints in 1955 as a sales representative.

Chainveyor Corp. Has Affiliate in Billesdon, England

Chainveyor Corp., manufacturer of engineered overhead conveyor systems, has announced that T. & T. Works, Ltd., Billesdon, Leicester, England, has been established as exclusive manufacturing and engineering outlet for the entire United Kingdom.

T. & T. Works, Ltd. will engineer, manufacture and install the complete line of Chainveyor overhead conveyor components, including "power and free" systems, on a royalty basis.

Fire-Retardant Treatments

A new guide covering fire-retardant treatments of building materials has just been issued by the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.

This is the first standard on methods of reducing flame spread properties of building materials. It deals with both pressure impregnation and the use of surface coatings like fire-retardant paints. Copies are 40 cents each.

NEW FINISH FOR ALUMINUM

Simply clean the surface, and you're ready for Uni-Clad . . . the revolutionary, low-cost, premium-quality metal coating that bakes to a superhard yet flexible finish. Won't chip, peel. Tremendous chemical resistance. Salt spray and humidity tests show no effect at 2000 hours. One package, dip or spray application. Supplied in colors, clears, flat or gloss. Exceptional performance on other non-ferrous and ferrous metals. Samples available.

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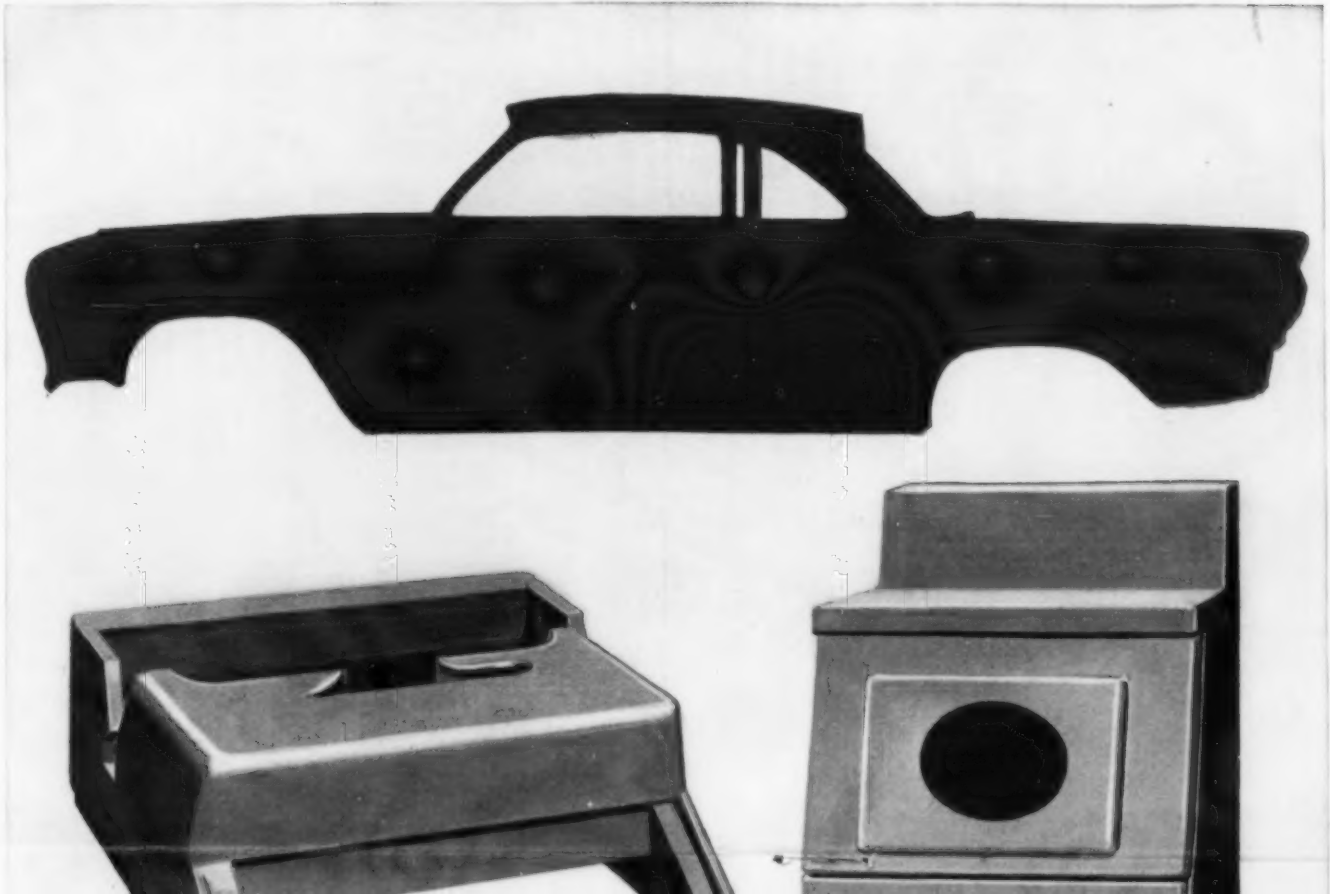
What's News in Enjay Resins...



BUTON® Resins produce tough, low-cost primers!

Buton resins contribute to low-cost, long-lasting protective metal primers. Several inherent properties make them a natural choice for numerous metal priming applications. Buton resins possess excellent hardness, toughness, and flexibility . . . combined with outstanding resistance to such corrosive materials as: detergents, salt spray, boiling water, plus many acids and alkalis.

Buton resins offer excellent adhesion on most metals, including steel, galvanized steel, tin plate, aluminum, and various light metals. In addition, they provide good intercoat adhesion with conventional top coats. The initial low selling price, plus the high bulk of Buton resins make possible new savings in primer formulations. For more information, contact Enjay at 15 W. 51st St., N.Y. 19, N.Y.

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Al. Kruse; Chainveyor Corp.

Chainveyor Corp., manufacturers of overhead conveyors, announces the appointment of Mr. Albert C. Kruse as factory manager for its Los Angeles, Calif., facilities. Mr. Kruse spent 23 years with the Automotive Division of another large company where he served as general supertintendent prior to coming to Chainveyor.

Schwab Named by DeSoto

Mr. E. R. Schwab has been named Product Manager, Industrial Product Finishes by DeSoto Chemical Coatings, Inc., Chicago 23, Ill.

Mr. Schwab joined DeSoto in 1952 as a Chemist after four years of previous experience in a similar capacity with another firm. In 1954 he was appointed Technical Director of DeSoto's Central Resin Division in Chicago Heights, Illinois. For the past four years he has served as Resin Sales Manager at that location.

In his new capacity, Mr. Schwab will coordinate the marketing and technical aspects of DeSoto's Industrial Product Finishes line. He will now be headquartered at DeSoto's Executive Offices in Chicago.

Salter, Mgr. of Production For DuBois Chemical, Inc.

John T. Salter has been appointed Production Manager of all manufacturing facilities of DuBois Chemicals, Inc. Mr. Salter joined DuBois in 1954 and, until his new appointment, served as branch manager of the firm's Dallas plant. In his new capacity he will be responsible, as general production manager, for the activities at the DuBois plants in Cincinnati, Los Angeles, Dallas, and East Rutherford, N. J., His duties will also include general supervision of the new Toronto plant of DuBois Chemicals of Canada Ltd., a wholly-owned Canadian subsidiary, which will open soon.

P.P.G. Co. Paint Unit Awarded Top Safety Citations

Employees of Pittsburgh Plate Glass Co.'s Ditzler Color Division in Detroit, Michigan, have been awarded three top safety citations, including the National Safety Council (NSC) "Award of Honor," the highest recognition obtainable for an outstanding industrial safety record.

Roger D. Freriks, manager for the Ditzler plant which produces automotive and industrial finishes, revealed the company's Paint Division unit qualified for the NSC commendation when employees surpassed the required 3,000,000 accident-free man-hours. Since the plant's last lost-time accident on May 3, 1957, employees had completed over 3,180,000 man-hours through June of this year.

Mr. Freriks also announced Ditzler plant employees received the Manufacturing Chemists' Association "Certificate of Achievement" and the Detroit Safety Council Industrial Award for their perfect safety performance in 1960 during which they completed 786,366 man-hours without a disabling injury.

Spraylat Corp.; 25 Years Making Strip-off Coatings

Twenty-five years ago Spraylat Corp., 1 Park Avenue, New York, N. Y., pioneered the use of Spray-on Strip-off coatings by introducing a temporary preservative coating for shoes. Since then the company has developed strippable coatings for preservation, packaging, protection and masking of all types of surfaces and objects from sheets of plastic to complete airplanes.

Spraylat Corp. is moving its manufacturing plant to larger quarters which will be located at 730 S. Columbus Avenue, Mt. Vernon, New York. The new plant will include improved laboratory facilities to further the development of Spray-on Strip-off plastic coatings.

McWhirter, a V.P. at Pennsalt

James McWhirter, General Manager of Industrial Chemicals Division, Pennsalt Chemicals Corp., has been elected a Vice President of the company. The announcement was made by William P. Drake, President.

LETTERS from READERS

Color Matching Boxes

We are interested in learning the names of suppliers of light boxes for color matching.—*R. Mfg. Co.*

In a letter we are giving you the full names and addresses of three (MacBeth, Murray and C. Withington).—*Editor.*

Removable Film Prevents Rust of Stored Parts

In June issue, on page 72, we read a very interesting story under the above title, signed P. C. Bardin. Is this now a manufactured product? Or does one make up his own solution?—*G. W.*

In a letter we are giving you the name and address of the manufacturer of this product.—*Editor.*

Scratch Resistant Coating For Glass

Perhaps you could help us out and tell us where we might buy a certain coating we are seeking. We are looking for a scuff resistant and scratch resistant coating that will adhere to glass.

This is to be applied by brush or spray to the windows of offices. It should not be clear, but be between translucent and opaque. We want a frosted glass appearance. Do you know of any company that sells such products?—*M. P. I.*

We are not sure which of the several products available for this purpose will best meet your requirements. Only thing we can do is give you names and addresses of manufacturers and suggest that you inquire about and perhaps try out some of their products. In a letter we are giving you several names of concerns listed on our reference card marked, "Glass, Coating for Windows to Reduce Glare."—*Editor.*

Supplier of Hydra-Spray

We wonder whether it would be possible for you to inform us the name and address of the manufacturer of spraying equipment known as Hydra-Spray? —*De A. Mayol & Co., Inc. (Puerto Rico.)*

It's a product of Gray Co., Inc., 53 Graco Square, Minneapolis 13, Minn. —*Editor.*

For Striping V-Grooves

In June issue, page 91, we read with considerable interest an inquiry under the above title, by W. & S.

Wheel and air striping "guns" will work well in that they will lay down a stripe as and where guided. The

problem we found several years ago was twofold. First of all, hand striping is slow and, where large surfaces are concerned, cumbersome. Secondly, milled grooves are seldom completely uniform as to depth and register with either side of the board. This causes the operator to veer out of the groove frequently, especially when attempting to gain speed in the operation; it also makes it impossible to rigidly mount guns and convey the board underneath on a powered conveyor. Either way, rejects were found to be considerable.

To meet this problem we developed a means to guide both the gun and the board automatically. We achieved excellent quality and pretty high speeds. We hope the above sheds further light on your reader's problem and that it is of interest to him.—*Automation Associates, Inc. (Kurt Rosenbaum).*

Finishing Consultants

We are dealing with diversified short-run products to Military Specifications. We would like a list of paint consultants who would be able to survey our paint section and problems. Also, perhaps you could furnish us with the approximate cost of such a service.—*I. S.*

In a letter, we are giving you names and addresses of several industrial consultants whose activities are often concerned with product painting layouts, set-ups, problems, etc.—*Editor.*

Pumps Abrasive Liquids

In the March issue, in the "Random Comment" section, page 6, a pump capable of conveying abrasive liquids is mentioned. We are interested in obtaining additional information concerning this apparatus and would appreciate any help that you can give us in connection with it.—*A. C. Co.*

The pump referred to in that item is a product of Hydro-Dynamics Industries, 115 N. Cicero Ave., Chicago 44, Illinois.—*Editor.*

"Alex still isn't fully convinced we should make this move."

Primer for Fiberglas

In the July 1961 issue, under "Questions and Answers," page 90, we notice an inquiry, "Why Paint Doesn't Stick to Fiberglas?", signed D. & P.

Our firm supplies primers in three categories for use on fiberglas. We would appreciate receiving the name and address of the firm making the inquiry, so that we might possibly be of help to them.—*Barrett Varnish.*

Would you please put us in touch with the afore-mentioned concern, as

we have a primer which has been most successful in this regard.—*Titanine, Inc., Div'n. of The Seagrave Corporation.*

P. S.—The suggestion offered to use "metal etching" primer for Fiberglas is far from accurate.

Articles Wanted From I. F.

Please send me, if available, a reprint or tear sheet of the following articles:

Light Face-Fitting Masks Help Save Workmen, Vol. 37, pages 104-105, February, 1961.

Pipe Circulated Paint Offers Safety, Economy, Vol. 37, pages 60-61, January, 1961.—*A. C. M. (Secretary to the President) of OPW-J.*

Both of these articles were written by our Field Editor, Mr. P. C. Bardin. We are sending you tear sheets of them.—*Editor.*

Striping Equipment

Could you please supply us with the names of companies that manufacture automatic striping equipment? We are manufacturers of table tennis tops, 54x60-in., and are presently silk screening the white lines. —*S. I. C.*

In a letter we are giving you names and addresses of three concerns.—*Editor.*

Pressure Sensitive Masks

I have a problem and have tried repeatedly to find a practical solution. I do sign painting and need a pressure sensitive adhesive that I can roll onto large sheets of wrapping paper used as stencils for truck lettering.

I sent off for a spray-it can of adhesive, supposedly pressure sensitive materials, and they sent me some sort of imperfected material that would be all right for photo mounting, etc. It isn't uniform flowing and the consequence is that cut-out masks curl up around letter edges, etc.

The Plexiglas Co. uses a pressure sensitive paper that is exactly what I want. I have used some of this paper for masking after buying Plexiglas, but of course don't use enough Plexiglas to supply the paper requirement. What I truly want is a liquid adhesive that will flow out evenly when rolled on and have the same resulting pressure sensitive qualities as the paper used by the Plexiglas Co., if possible.

I have gone to some minor expense trying to obtain such a product and even tried several batches of mixtures, but come up with nothing worth while. For lettering masks, it is essential to have a first grade product; otherwise the sharpness of

"Okay—the job is yours. I like your looks."

the lettering doesn't compare with hand lettering, when it should excell hand lettering for sharpness.—*E. W.*

In a letter we are giving you names and addresses of companies that supply adhesives; also firms that can supply pre-cut letters and masks cut from pressure-sensitive tape.—*Ed.*

We Make Plastisols

In the July issue, on page 86, a subscriber inquires regarding a list of leading manufacturers of plastisols. You make the comment that you do not have a complete list and would welcome letters from readers on this subject.

We wish to point out that we are one of the leading formulators and producers of vinyl plastisols in this country, and we would be happy to have you add our name to a list which you might be compiling.—*Dennis Chemical Co.*

We wish to submit our name as a manufacturer of plastisol and organisol materials. Perhaps we can be of help to some of the many readers of your fine magazine.—*Specialty Coatings, Inc., Div'n. of Thompson & Co.*

We are one of the leading manufacturers of plastisols.—*Metal and Thermit Corp.*

Stick-on Nameplates

I am trying to locate an article which, I believe, appeared in your magazine within the last year or two. This article described the production of color anodized foil nameplates with adhesive backing. It was characterized by the use of Virkotype equipment in the process.

If you have published such an article I would appreciate very much receiving a reprint thereof, or title and issue reference, so that I could locate it.—*N. E. & M. Co.*

We believe the item you have in mind appeared in April 1961 issue, in Random Comment, page 6. We are sending you a tear sheet of this page. As you notice, the "Name-Stiks" are a product of Allen Hollander Co., Inc., 385 Gerard Ave., New York 51, New York.—*Editor.*

Dip-Whirl Coating

In an article in the June issue, entitle, "Coating Small Metal Items," you refer to a dip-whirl coating machine. I would like to get the name of this machine so that I might obtain more detailed information on its operation.—*R. M. Co.*

Such a machine is made and offered by Ronci Machine Co., 2 Atlantic Blvd., Centredale 11, R. I., see their ad. in July issue, page 103.

Open-End Tumbling Barrel

We would like to get in touch with Mr. P. C. Bardin, author of "Coating Small Metal Items," in June 1961 issue, beginning on page 39. Will you please arrange for his contacting us?

We are interested in his idea of coating by means of open-end tilted tumbling barrel. Perhaps Mr. Bardin could give us names of suppliers of such equipment, preferably equipment with which he apparently has had experience.—*G. C. Co.*

In a letter we are submitting names and addresses of several manufacturers of this equipment.—*Editor.*

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QUESTIONS and ANSWERS

Zinc Chromate Primer on Aluminum and Steel

Under the above title, in June issue, pages 92-93, I see a question by P. K. Co., and a reply to it by Mr. Zahn.

I believe some points in Mr. Zahn's answer should be clarified in order to prevent leaving the wrong impression with people who are not thoroughly familiar with paint vehicles, rust-inhibiting pigments and primer coatings as a whole.

In the third paragraph (second column) of his answer Mr. Zahn states, "this does not need to be zinc chromate, as there are many better materials available." This may be interpreted to mean that zinc chromate is a second rate or inferior primer pigment. This is not true. While red lead, metallic zinc, basic lead silica chromate, and other primer pigments are used, zinc chromate still is widely used as a rust-inhibiting primer pigment.

While it is true that zinc chromate is not the ideal pigment to use in certain exposures, such as acid, each of the other rust-inhibiting pigments also has its faults. For a rust-inhibiting pigment, zinc chromate still leads the field except for specialized coatings and applications. As far as vehicle is concerned, pigents do little or nothing to up-grade or down-grade the particular vehicle in question. The coating system can be up-graded or down-graded by the use of pigments, but the vehicle itself remains the sace, unless the pigment is reactive with the vehicle.

In paragraph 4, in which he speaks of wash primers, he says, "these latter specialties were developed for use where regular phosphate treatment was not available. They were a poor substitute and are no longer in popular use." I assume he is speaking of Vinyl Wash Primer such as the MIL-C-15328a used by the federal services.

These wash coats were not developed to take the place of phosphate treatment; rather they were developed to be applied on a moist steel surface which had just been sandblasted, to prevent rusting until the steel could be dried and another coat of paint applied. They were also developed as a primer or coating which would have adhesion to aluminum and would be adhered to by subsequent coats of paint. They have not lost their popularity with customers who want a quality job on steel or aluminum. They not only give the paint system better adhesion, but due to the better adhesion, underfilm creepage is reduced and longer coating life is obtained. There are, however, certain types of vehicles which will not work well over vinyl wash primer, such as nitrocellulose and catalyzed epoxies.

In paragraph 7, page 92, Mr. Zahn says: "But there are many other good inhibitive pigments which can do at least as well or even better, and at the same time they will accommodate

application in more reasonable thicknesses." In this part of his statement it seems to me that he contradicts his statement in paragraph 3 about zinc chromate being a second rate pigment. As far as film thickness is concerned, pigments have little to do with this, as a generalized statement. Vehicle type, formulation know-how, and application skill determines how much paint can be applied in one coat.

In paragraph 8, page 92, we read: "There are many other good priming paints, other than zinc chromate types and they can have the same air-drying speed." This statement would tend to imply that pigments affect the drying or curing time of a paint. The drying time of a coating is dependent on solvent evaporation and speed of oxidation, or reaction rate in the case of catalyzed materials. There are certain instances, in baking operations, in which certain pigments with certain vehicles accelerate or retard cure. This does not happen in air-cure systems.

Now just a word about the problem presented by P. K. Co. It seems to me that these people may need someone to outline a painting system, giving primary thought to the vehicle type which would fit their needs, and let primer pigment be secondary. I agree with Mr. Zahn in going to more modern coating types and formulation practices, as well as to more film thickness. However, I would not completely discard the wash primer; it may do the job these people want. I think perhaps that someone has misled them on what it will do and how it should be used.—*Felix Kelinske, Briner Paint Mfg. Co., Inc.*

Critical study of the capabilities and weaknesses of any item produced can result in both better quality control procedures and more realistic guarantee periods.

White Streaks, Smudges After Rubbing

Could you suggest a cleaner for cabinets after rubbing? The cabinets may be clean (apparently) when they leave the plant, but after several days white streaks and smudges appear in corners, recesses and grooves. We wish to eliminate this white residue.—*W. M. Co.*

This seems to be a common complaint. Most furniture manufacturers use a rather dark compound and lubricant in rubbing operations, and most of them endeavor to thoroughly clean up the surfaces before packing furniture for shipment. In spite of this cleaning, some white streaks will appear after several days.

One method of getting rid of this residue is to rag-on (apply with a rag) a coat of very thin brown liquid wax; then wipe carefully and thoroughly. The wax may be sprayed on, but many finishers prefer ragging, they say that it is more practical. Being thin, it comes off readily by wiping with clean rags; it leaves no scum or white streaks.—*J. R. C.*

Dipping or Spraying?

Our service recently was approached by a comparatively small firm which is expanding and now wonders whether to buy equipment for conveyorized dipping or for spraying. The firm is expecting to produce approximately 50,000 pieces per day of articles like chair legs, arms, backs and seats, all made of wood.

We have gone through the literature of the last ten years, but could not find any data on comparison of the economics of the two methods in question.

The inquirer is looking more for that method which will give the low-

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est production cost rather than the highest quality of finish.

We wonder whether your service would be in a position to assist us in answering the question.—*N. S. C., Canada.*

There are several angles to this question, some of them being too controversial to put into print. Dip coating is a simple method of coating and if it is set up correctly it need not be too wasteful and it may produce results that are "good enough." However, all products are not well suited to dip finishing.

In dip coating, an excess of material is applied which must be subsequently drained off the surface. Unless extreme care is used, runs, sags, fatty edges and clinging tear drops will result. Positioning of the product under the conveyor is highly important so that excess material will drain properly.

Viscosity of the material is also highly important, and it should be checked at frequent intervals and solvent added to maintain the preestablished standard. The dip tank should be equipped with a solvent-vapor-drain enclosure at the exit end to facilitate correct drainage.

Everything I have said about dip coating would apply to flow coating of the parts. The quality of finish by either dipping or flow coating may not be as good as that obtained by spray finishing. It all depends upon many conditions and factors.

If your inquirer will submit drawings showing size, shape, etc., of products to be finished, to his finishing equipment supplier, he can obtain excellent advice, or he could mail drawings to one or more of the several finishing equipment concerns that advertise in this magazine. They can tell him if his product is suitable for dip coating.—*P. C. Bardin.*

Excess Dust and Excess Heat in Paint Shop

We are a sheet metal fabricator, specializing in cabinets, chassis, etc. for the electronic industry. We operate a paint shop that is conveyorized and uses infrared ovens. In our paint shop we have two rather serious problems which we believe some type of presently available commercial equipment can help us to eliminate.

First is the problem of dirt and dust within the shop, due to its adjacency to other portions of the plant, as well as to open windows during warm weather. This dust adheres to the finish of the metal, while it is still in a "wet paint" state, and makes our finishes look very bad when they are dried and hardened.

Our second problem has to do with space limitation in our paint shop. One of our spray painters has to work with his back within a very short distance of the back of our infrared oven. This means that he is subject to excessive heat, especially noticeable during warm summer months. I thought that perhaps one of your advertisers may have some experience with regard to installation of screens or something of that sort, that would eliminate this problem. Any help you can give us will be appreciated.—*R. R. Co.*

I would advise you to contact a firm of finishing equipment engineers and have them install a "pressurized" finishing room. This would eliminate the dust problem. Much can be done, even with an old building, by installing partitions (tight metal and glass) to enclose the section of the finishing room where wet paint on products must be conveyed to the oven. This enclosure should be "pres-

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surized" by injecting a greater volume of filtered air than the volume of air removed by your exhaust fans. This will end your dust problem. After products leave the bake oven it matters little how much dust is blowing around.

Now as to the discomfort of the infrared oven during warm summer months, this should be easy. One way is to elevate the oven to ceiling height. If your ceiling is too low it may be possible to move the oven to the roof of the building, extending the conveyor.

Another plan would be to install a vertical infrared oven instead of the usual horizontal type. I am quite sure that any reliable firm of finishing engineers would be able to go onto the job and suggest ways of eliminating all of your troubles, which do not seem to be very serious.

It may be that the engineers will suggest moving the finishing room from the first floor to one of the upper floors, (as I remember it, yours is either a two or possibly a three story building) but I am positive some way can be found to pressurize the section where you dip and spray, and up to the oven (as I have outlined in a published article I am sending you) and locate the oven where it will reduce or eliminate all discomfort to the workers due to the heat during warm months.—*P. C. Bardin, Field Editor.*

Don't expect employees to think as you do. The employee may have a different background, different interests, a different education. His abilities, ambitions and problems are probably not the same as yours.

Uniforming Poplar As Used in Furniture

One of my customers uses West Virginia poplar for making occasional tables. As you know, poplar is not uniform in color since the sapwood is white and the heartwood is yellow. The heartwood soaks up the finish a lot more than the sapwood, and it also turns darker with the finish than the sapwood.

Is there some way of treating either the heartwood or sapwood so that the finish will appear uniform, especially where the stretchers or legs may be mixed up in one table—heartwood and sapwood?—*J.W.M.*

Your customer will have to use a sap stain on the poplar—or any other kind of wood that contains sap streaks—before staining the entire surface. The idea is to apply a stain to the sap wood only to bring it to practically the same color as the heart wood. Then, when the entire piece is stained, you should have a uniform color.

Sap stain may be applied by using a small spray gun, such as would be used in spot spraying, or it may be brushed on. The method used would depend upon the volume of production.—*P.C.B.*

To uniform the colors in poplar requires the same general procedure as uniforming the colors in any other wood. If enough care is taken, the heartwood and sap wood will have the same appearance when finished.

Using one of the available pigmented materials, lighten the heartwood with a color that will tend to neutralize the yellow. Use the same type of material, or an NGR stain to stain the sap wood into the same color range as the heartwood. Follow these two operations with a good low-solids washcoat material. After dry-

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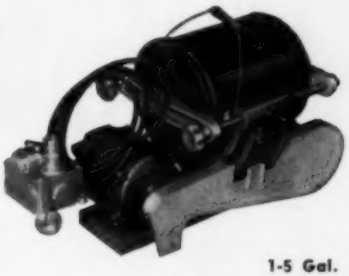

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ing and sanding, other materials such as stains, glazes, toners, etc., may be applied to achieve the desired finish.

The end results are limited only to the amount of money that can be spent on finishing operations.—*Sandy.*

Color Chart Showing Standard Finishes?

We are in need of a sheet or chart showing various colored finishes which have become standard in the wood finishing industry. Some one has suggested that we contact you in this regard. This person was sure that you put out a "Color Wheel" showing these various finishes.

If you have such an item, would you please send one to us? In the event that you do not supply such wheels, perhaps you could tell us where we might get such a chart showing colored pictures of these finishes.—*R. Mfg. Corp.*

There is no such thing. A collection of colored photos of the different manufacturer's furniture would be as close as anyone could get. Remember, these finishes change from market to market.—*XZ.*

I have checked this one out rather carefully, although what I have to say on the subject only confirms previously held opinions.

There can never be a standardization of wood finishes as such. The finish is a composite of the wood itself, plus the various components which make up the finish. First, since wood is a product of Nature, each piece has its own individuality; even in sections from the same tree you will find an endless variety. Second, finishes may consist of one or a dozen operations, each with varying degrees of coloring or transpar-

ency, and each one is affected by the capacity of human sight and touch.

Even if the finish becomes completely opaque, so that it is simply another color, the varying capacity of the wood and the undercoats to affect gloss make such color charts unreliable. Also, all wood finishes change with age and light.

Many capable technical societies have tried to bring some order and standardization to wood finishing. None of the projects have borne much fruit. Perhaps it is just as well. Wood is such a beautiful product, and there are so many countless ways to challenge the ingenuity and imagination of the finisher that it would be a shame to confine him to say 100, 1000, or even 10,000 standards.

As for the wheel, such a design lends itself ideally to the illustration of progressive applications of any type of finish. It has been used by many manufacturers of finishing materials for this purpose, although I cannot locate any at present.

Perhaps some wide-awake maker of wood finishes has adopted the device to demonstrate the finishes obtained with his materials. The effectiveness of the idea is proved by the fact that they are being mistaken for standards.—*K. Mac.*

Mathews Purchases Wilkie Co.

Mathews Conveyor Co. of Ellwood City, Penna., has purchased The Wilkie Co., a prominent Philadelphia manufacturer of telescopic roller, wheel, and belt conveyors. The Wilkie Co. will continue to operate in Philadelphia as a wholly-owned subsidiary of Mathews Conveyor Company.

John McLaughlin, a former Wilkie partner, has joined the Mathews organization, and is serving as General Manager of the Wilkie operation.

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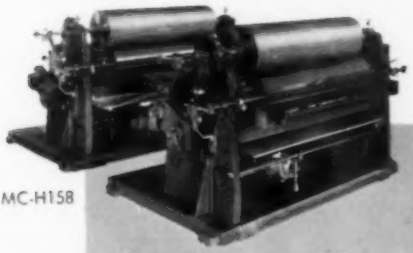

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Coating Perforated Sheet Metal Strips

TODAY THERE is a definite trend toward the use of perforated metal, which is available in a multitude of patterns and in almost any width desired. Perforated metal is used in folding screens, for room dividers, in offices, plant lobbies, retail stores, department store windows and in many other places.

Some of the patterns are simply flat sheet steel or aluminum with holes punched to form a continuous or repeat design; in others the metal bridge between the holes is slightly raised to form a sort of basket weave effect.

Perforated metal is available in cut-to-size panels or in continuous strip form. Whether in single panels or in coiled stock, it all has to be finished with either a color coat on cold-rolled steel or perhaps a clear coat on bright aluminum or stainless steel. It is highly important that not only the flat surfaces be coated, but also the edges of all perforations. How can this be done on an economical production basis?

Provided it is flat, thin gauge sheet metal, the coating may be applied by a roller coater, and both surfaces and all perforations and edges will be coated. With the correct formulation of the paint or clear coat, any bridging of material across the perforations can be avoided. For heavier gauge metal, say up to ¼-in. thick, or in those cases where the metal is raised somewhat between the

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perforations to form a sort of basket weave pattern, the coating can be successfully applied electrostatically.

In a typical setup wherein the No. 2 Process of electrostatic painting is used, one revolving disc is positioned horizontally above and another disc is below the moving strip of metal. These discs spin off a fine mist of coating material which is electrostatically attracted to the perforated strip or sheet of metal being processed.

The strip passes over two metal rollers, one located just beyond the rubber tension roll at the infeed end, and the other just ahead of the other tension roller beyond the bake oven. These metal rollers "ground" the metal strip electrically. Atomized paint from the upper disc floats down onto the metal surface, while the mist of paint from the disc below the moving strip is attracted upward in the static field to coat the under side. In the top and bottom coating process sufficient paint from both discs is attracted to coat all perforation edges, and even the under side of the raised metal bridges in the basket weave pattern.—*Bardin.*

Electric Hose Reel. A revolutionary new electric powered hose reel designed for heavy duty use is now available for industrial applications under the trade name "Zierco." Powered by a 1/3-hp. motor, the reel is actuated by finger-tip controls. A gravity hose coiling system is made possible by its vertical spindle design, eliminating kinks and tight coiling which cause hazardous "snaking" on payed-out hose. In addition, the natural level coiling eliminates undue strain on the hose resulting from tight coiling.—Zierden Co., 3815 S. Kinnickinnic Ave., Milwaukee 7, Wisconsin.

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New Large Knife Heater

For certain operations requiring a larger (wider or thicker) tool or knife than the conventional patching knife, this new heavy duty heater will take a tool with a blade up to 3½-in. wide.

It is designed for continuous operation on production lines—rated 350 watts and can be furnished for 115-volts or 230-volts. Can also be furnished with a thermostat to 700° F.

OPAL
THE OP-AL ELECTRIC AND MANUFACTURING COMPANY
3133 MARTINDALE AVE.
INDIANAPOLIS 5, INDIANA

For more data, circle 233 on colored card.

Dip-Whirl Painting For Small Metal Parts

FOR painting small metal stampings and other metal parts which are up to as long as 15-in., centrifugal coating offers some features worth considering. First, the coating cycle is completely automatic. A loaded work basket has to be placed in the machine and upon completion, it has to be removed—and that is all there is to it. The process is economical in that there is no waste of paint.

All of the paint that does not adhere to the surface of the parts being coated is returned to the dip tank. This method of painting is fast because no time is lost waiting for excess paint to drain off the surface of the parts; the excess paint is all removed by centrifugal force—whirling at high speed.

Another feature of this method of painting small parts is in the loading and unloading of the work basket. In some cases the parts are delivered to a large hopper by conveyor. Then the operator places the empty work basket under this hopper, opens a small door and allows the release of enough parts to fill his work basket. It is then transferred from the hopper stand to the coating machine by means of an electric hoist operating under an overhead monorail or from a swinging beam. In other cases the parts, loaded in containers, are delivered by fork lift truck to large bins which have a sliding door at the bottom of one end.

KILL STATIC WITH A GUN!

Simco Ionizing Air Guns will put an end to static woes in any finishing operation! Plastic parts are blown clean, while being neutralized, so that dust, dirt and lint are *completely* removed and will not be reattracted! This new electronic air gun is safe, easy to use, and *guaranteed* effective! Write for facts.

the SIMCO company
920 Walnut Street, Lansdale, Pa.

For more data, circle 197 on colored card.

RONA™

Synthetic **PEARL ESSENCE** *with the Natural Look!*

For The Finest **PEARLESCENT FINISHES**

BAKE OR AIR DRY–For Your Product Made of Metal, Plastic, Wood or Glass.
Write for sample. Specify application and choice of vehicle.

New . . . 12 PAGE TECHNICAL BROCHURE AND CONVENIENT WALL CHART AVAILABLE ON REQUEST

See at a glance the properties of many natural and synthetic pearl pigments, their chemical and physical characteristics, and recommended uses.

RONA PEARL CORPORATION

A division of Rona Laboratories, Inc.

EAST 21st & 22nd STREETS, BAYONNE 2, NEW JERSEY
Largest Exclusive Manufacturers of Pearl Essence
Plants: Maine • New Jersey • Canada

For more data, circle 198 on colored card.

The operator, using a shovel, fills the work basket with the parts from this bin.

After a batch of parts have been painted the operator lifts the work basket by means of a hoist and dumps the coated parts onto a metal mesh belt conveyor which carries them through the bake oven, or if an air-dry paint has been applied, the parts can be dumped into wire mesh trays for drying.

By this method of coating, changing colors simply involves having a separate dip tank and work basket for each color. Under correct operation, no coating material is thrown onto the inside walls of the machine, hence no cleaning operation is required.

It is well to remember that frequent tests for viscosity should be made because the coating material works best at a certain uniform viscosity. From time to time solvent may need to be added to maintain this uniform viscosity. In centrifugal finishing as in dip coating, viscosity of the material is very important to successful results.—*C. D.*

Marking-Ink Offered in Colors. A marking ink in a 6x1-in. writing tube, with different size ball points for making lasting wide lines (5/64, 1/8 or 3/-16-in.) to code, number or mark smooth or rough surfaces of metal, wood, plastic and glass, is now available from John P. Nissen, Jr., Co., Glenside, Penna. It contains a special fast-drying opaque ink that withstands heat and weathering under adverse conditions.

The Container in Which A Product is Delivered

IT HAS always been a source of wonder to me that any maker of a product as expensive as paint would quibble over pennies toward the cost of packaging it. Perhaps some justification can be found in the steadily rising cost of raw materials that go into the product. Keeping pace, are the prices of drums, cans, cartons and labels. So, the search turns—perhaps naturally—to cheap containers. But cheaper packaging is usually deficient in something—in appearance, durability or both.

Paint is a heavy product. A 4-gallon carton can weigh as much as 40 to 70-lbs., a 5-gallon can may weigh up to 80-lbs. These containers can get an awful lot of bumping around between the time they are filled at the factory and when they are used. Even if the manufacturer's plant is fully automated, loading and transit and handling by the purchaser can still be plenty rough. The lost contents of one container can liquidate the savings on 100 cheaper ones.

The cost of a leaker is seldom that cheap. Paint has a way of flowing from package to package, until many cans are ruined, or at least disfigured. This can result in many costly claims for damage. A few such occurrences can give a customer the idea that his supplier doesn't care.

A round can costs only a few cents more than a square one, but a round container has many times the strength of a square one.

for AIRLESS
paint spraying and coating
GUNJET
No. 22HP5STC
GunJet®
with
TUNGSTEN CARBIDE
valve seat and needle
•
STAINLESS STEEL
body and cap
•
TEFLON packings
for efficient, trouble-free performance
Here's the gun designed in detail for better, trouble-free performance. Needle cleans seat orifice automatically. For use at pressures from 400 to 2,000 psi. Complete choice of interchangeable orifice tips in all spray patterns, capacities and materials.
SPRAYING SYSTEMS CO.
3240 Randolph Street • Bellwood, Illinois
FOR INFORMATION WRITE FOR BULLETIN 95

For more data, circle 199 on colored card.

A round can makes only limited contact with other objects, which keeps abrasion to a minimum.

There are some products for which the square can (despite its weakness) is much more suitable. Here one must depend on the carton for protection. Fortunately, this industry has developed both cartons and spacers of tremendous strength, plus a fair degree of water resistance. Naturally, this is also a field where something can be shaved to sell a little cheaper, but the false economy of such practice should be self-evident.

Labels also can be a factor. At a glance the buyer can see whether his supplier is merely complying with law and custom for identification purposes, or is standing 100% behind his goods. The development of lithographed cans at reasonable prices offers manufacturers a package of class and individuality. Many firms have adopted them, even for their cheapest products. While first costs may seem high, the cost of labels and labeling are saved. But the big ingredient is the message, which says: "This is my product which I think enough of to put in this fine container."

Many years ago makers of delicate products were forced to admit that signs, such as, "This side up, use no hooks," and especially "glass," where only an invitation to violence. So, some of the smart ones decided to confide in the transportation workers. They tried explaining: "This contains Haviland China" or "This is a ..... Computing Scale; please handle it carefully." Strange as it may seem, it did work. Damage dropped sharply.

I think the same thing applies to a package of finishing material. Everyone will handle a good package with a bit more care and respect—even your own employees.—*K. Mack.*

NEW

AG PAINT ARRESTOR PADS CATCH AND HOLD MORE PAINT!

ONE 2" AG PAD DOES THE WORK OF TWO 1" PAPER PADS

New AG Pads are specially engineered *white fiber glass* pads with the *green* back. They save you money because they give *longer* service, hold more paint, cut maintenance upkeep. Their greater holding capacity keeps your spray booths cleaner. Non-clogging — less "drag" on your fans. Try them in your filter banks and notice the difference AG Pads make!

AAF **American Air Filter Co., Inc.**
Amer-Glas Department IF-1
215 Central Ave., Louisville 8, Ky.

Please send information on AG paint arrestor pads.

FIRM_____

ADDRESS_____

CITY_____ STATE_____

☐ Choice distributor territories open. Check here for distributor franchise data.

For more data, circle 234 on colored card.

That old adage—

"The longest way around is the sweetest way home"

if adhered to today, is both wasteful and terribly expensive, especially when applied to publication advertising in efforts to reach specific markets.

For example, if you make organic finishes for product coating .... your publication advertising should be pointed directly to manufacturing concerns that buy and use organic finishes for application to products which they make. Without waste and exorbitant expense, it's smart to advertise in a magazine that gives exclusive coverage within those industrial markets. Surely, it doesn't make sense to advertise organic finishes in publications which feature other interests and thus detract from your own individual sales promotion efforts.

Likewise, if you make paint application equipment, paint drying and baking ovens, surface cleaning compounds and equipment, etc., a direct publication advertising approach is your best bet—this, instead of sifting around through a haystack hoping to find a prospect.

What's this all about? It's just a matter-of-fact way of directing your attention to INDUSTRIAL FINISHING Magazine, which is the only publication that affords the most effective, economical and direct approach to buyers and users of organic finishes and finishing equipment. We emphasize the word "only" because, editorially and circulation-wise, INDUSTRIAL FINISHING Magazine doesn't stagger and stumble around trying to reach every industrial market in existence.

No distribution among electroplaters, porcelain enamelers and other inorganic applicators — just full coverage to those who apply organic finishes.

In conclusion: Make your advertising program more effective, but less expensive, by using adequate space in INDUSTRIAL FINISHING Magazine first. *And, you can couple it with I.F.'s direct-mail service if you wish, at slight additional cost.*

Industrial FINISHING

BPA

PRACTICAL PUBLICATIONS, INC.

1142 N. Meridian St., Indianapolis 4.

New York • Los Angeles • San Francisco

Editorially *Industrial Finishing* presents a variety of interesting and informative articles in every issue. They are written by practical men who have varied backgrounds of training, ability and experience.

Here is where important personnel in industry look to find authentic facts about the latest materials, methods and facilities for finishing manufactured products safely, efficiently and economically to produce lasting surface durability and attractiveness.

Sources of supply are found, problems are solved, methods are compared, suggestions are presented and new ideas are revealed. It all spells VALUE to everyone concerned with this increasingly important phase of modern industry.

● SUPPLIES
● MATERIALS
● EQUIPMENT

HydraAirless 30 is a Complete "Ready-To-Spray" Unit

For the user who is interested in economy at a modest initial investment, the HydraAirless Economy 30 is offered by the Spee-Flo Co., 6614 Harrisburg Blvd., Houston, Texas. Featuring the big Atlas II pump which gives full power and performance with all materials, the HydraAirless Economy 30 is a complete "Ready-to-spray" unit. Included is the pump, container and cover, air regulator, material strainer, 25-ft. Nylon hose assembly, H-Gun and tungsten carbide spray tip.

The HydraAirless Economy 30 is not a small, or "junior size" unit with limited capabilities, but a full size 30 to 1 ratio unit capable of handling all materials. It will serve up to four guns with maximum efficiency. For limited production requirements where only one or two guns are required, the unit literally "loafs." This assures long service life and economical operation and also provides for expanded production without adding or replacing equipment.

Standard HydraAirless convenience accessories may be added to the unit as desired without any modification. For more information on the HydraAirless Economy 30, ask for new Catalog Sheet, PM912-5.

For more data, circle 1 on colored card.

Will serve as many as four spray guns.

Change Spray Pattern Quickly

A push-pull device, enabling an instant change from a broad spray pattern to a narrow one, can now be incorporated into the most widely used DeVilbiss P-MBC or MBC hand spray gun.

Development of the device has been announced by The DeVilbiss Co., Toledo, Ohio, as another step in its program to make spray painting, easier, quicker and more efficient.

The push-pull feature is an innovation in spreader valve design. Pushed in, it switches the spray from a broad to a narrow pattern. Pulled out again, the broad fan spray pattern is restored—all without losing the original pattern setting.

Thus, the spray painter working

on large flat areas can instantly switch to a narrow pattern to extend the length of the spray for otherwise out-of-reach areas or for coating pipes, wainscoating or other items better done with a narrow pattern. This cuts down needless overspray, saves cleanup time, and eliminates stops to readjust the gun. The new pattern changer can be added to any DeVilbiss external mix P-MBC spray gun.

For more data, circle 2 on colored card.

For Spraying Test Panels To Compare Results

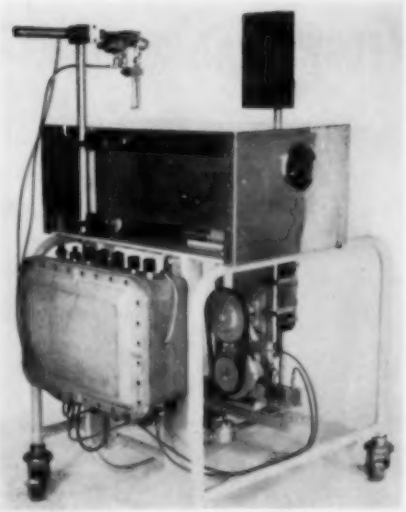
Spraymation Model C9125 Automatic Panel Spraying and Lapping Machine is a commercial unit designed to permit three axis spraying and lapping of test panels on a fully automatic basis without operator attention.

A spray gun is traversed in front of the test panel which is automatically raised or lowered in steps of 2-in. while the gun is turned off at the end of each spray stroke. The panel will be completely sprayed for its full length and automatically returned to starting position. There is then a timed flash period after which subsequent coats will be applied. The distance from the gun nozzle to the panel is automatically changed in order to simulate hand spraying conditions.

Any of three pre-selected cycles may be instantly obtained through use of a selector switch on the control console. This gives a fully automatic cycle to carry out the necessary flash periods and spray passes required for the specific material being sprayed.

The speed of traverse of the panel can be varied as required, and a tachometer indicates the particular speed in progress.

The unit is completely explosion proof; it is designed for ease of portability in laboratory use. The unit is being used in color control work in the automotive industry and wherever accurately coated test panels are essential. A product of Spraymation, Inc., 25 Amity St., Little Falls, New Jersey.



Sprays test panels so you can compare the results easily, quickly and accurately.

For more data, circle 3 on colored card.

Spraylat Spray Booth Coating

Every company that does paint spraying is vitally interested in reducing maintenance costs, especially in keeping spray booths clean in the most economical manner. Spraylat Corp.'s Booth-Strip, which is a water-base plastic strippable coating, offers industry an excellent method of spray booth maintenance by cutting both material cost and man-hours in application and removal.

The company offers a booklet which describes an actual plant evalu-

FLOW COATING BOOK

Mr. Zahn, the author of "Flow Coating", says that any product which can be dipped or sprayed can be finished by the flow-coat method. His new book contains 296 pages 5¼x7¾-In.; 13 chapters.

The great range in new kinds of solvents now available, plus phenolic-base resin paints and vinyl type paints which have been so successful in the flow coating method of application, presents endless possibilities for profit. The industrial user can now afford to pay a little more for better materials and profit by a higher quality product.

..."Flow Coating" explains the various industrial painting methods such as: dipping, spraying, electrostatic, steam, roller coating, centrifugal, hand spraying, automatic dip and many others. Direct comparisons between flow coating and these methods are dealt with in detail.

Mr. E. A. Zahn has spent 25 years in research on industrial paints and application methods. He is the inventor of the Zahn Viscosity Cup, and has acted as consultant to many manufacturing concerns. In 1938 he received the Charles A. Coffin award for contributions made to the electrical industry. Mr. Zahn was associated with General Electric for 25 years and is at present an independent Finishing Consultant.

Price $8.00—Money Back Guarantee

INDUSTRIAL FINISHING

1142 N. Meridian St. Indianapolis 4, Ind.

ation of Booth-Strip, and explains the reasons for the saving in booth maintenance cost. Also, a technical data sheet on Booth-Strip and an illustrated brochure describing its properties. Spraylat Corp., One Park Ave., New York 16, N. Y.

For more data, circle 4 on colored card.

Keeps Paint Off Hands; Helps Fast Wash-Up

Protective barrier cream, "Kerodex," offers painters, color mixers and pigment workers a quick, easy wash-up, as well as positive protection against dermatitis caused by solvents, thinners and paint chemicals. For use against oil-based paints and petrochemical solvents and thinners, "Kerodex" No. 51 (for dry work) is recommended. For use against water-based paints and wet conditions, "Kerodex" No. 71 (for wet work) is recommended. "Kerodex" is distributed by Ayerst Laboratories, 22 E. 40th St., New York.

For more data, circle 5 on colored card.

Improved Chrome Yellows For Outside Products

Three new Regent Yellows, which are chrome yellow pigments with considerable improvement of lightfastness and alkali resistance over the regular chrome yellows, have been developed for the paint industry by the Pigment, Color & Chemical Division of the Sherwin-Williams Co., 260 Madison Ave., New York 16.

The improvement in light resistance is such that it is necessary to expose the Regent Yellows at least 50% longer in order to obtain a given amount of darkening. This improvement is the same, whether tested by accelerated or outdoor exposure.

Tests conducted in soap, sodium hydroxide or alkaline cleaning solutions, such as trisodium phosphate and sodium carbonate, show that the Regent Yellows have a substantial increase in alkali resistance in tints as well as full shades.

These improved chrome yellows are available in three shades: Regent Yellow Primrose 12176, Regent Yellow Light 12177 and Regent Yellow Medium 12178. In their initial application, they are not as bright as conventional chrome yellows; however, they darken much less on exposure. Therefore, after several months, the net result is a cleaner, brighter yellow.

In other properties, such as ease of dispersion, gloss, non-bleeding and heat resistance, the Regent Yellows are similar to the conventional chrome yellows.

These new pigments are recommended for all exterior uses including automotive, truck, bus and farm equipment finishes and industrial enamels and lacquers.

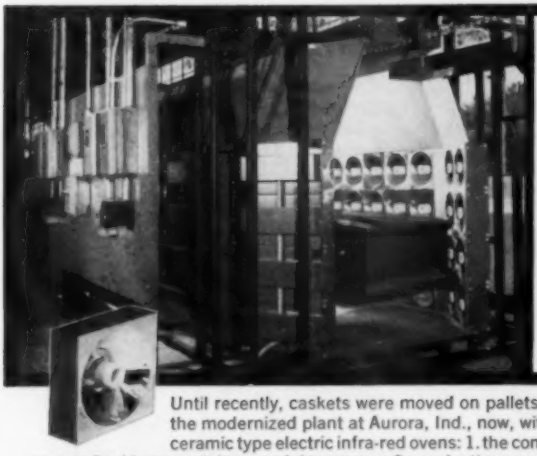
More information on these alkali resistant, lightfast Regent Yellows is given in Technical Folder F-3. Copies of this folder and samples may be obtained from the Pigment, Color & Chemical Division of the Sherwin-Williams Company.

For more data, circle 6 on colored card.

Hammerlac in Many Colors

The Industrial Coatings Division, Flood & Conklin, 132 Chestnut St., Newark, N. J., announces a new lacquer that provides a hammered finish for metals. "Hammerlac," the new finish, is available in a wide range of colors, and offers good adhesion, depth, bond, fast air drying, and a hiding quality that covers minor surface defects. Sample panels available.

For more data, circle 7 on colored card.



Metal Caskets at Aurora Casket Co.

finished in 1/4th previous time

with the help of driQuik INFRA-RED OVENS

Until recently, caskets were moved on pallets and air drying was the practice. In the modernized plant at Aurora, Ind., now, with automatic conveyors and driQuik ceramic type electric infra-red ovens: 1. the complete finishing operation, from base coat to final lacquer, takes much less space; 2. production was increased 20% with less labor cost; 3. quality was improved. Only driQuik, with its accurate temperature control (to within 1 degree of desired heat by turning a knob) can give the correct temperatures for each of the different coatings.

No bulbs, quartz tubes, rods or sockets to burn out and need replacement. Write for FREE field demonstration in your plant.

driQuik DIVISION DRY CLIME LAMP CORP. GREENSBURG, INDIANA

For more data, circle 200 on colored card.

for maximum ADHESION with maximum GLOSS!

from NAZ-DAR:

5900 SERIES Synthetic Gloss Enamel—for screen process printing on metal, wood, masonite, anodized aluminum, Mylar®, cardboard, decals, certain plastics. High gloss, flexible finish. Air-dry in 4-6 hours or force-dry as required.

800 SERIES Weatherproof Enamel—use on metal, wood, glass, cardboard and as flock and bead adhesive. Gloss finish. Air-dries overnight in normal atmosphere.

NAZ DAR

WRITE FOR FREE CATALOG

THE NAZ-DAR COMPANY

Dept. IF-8, 461 Milwaukee Avenue • Chicago 10, Illinois

For more data, circle 201 on colored card.

Leg Type Small Spray Booths Useful for Spray Cleaning

A new leg-type spray booth which requires only a 3x3-ft. space is offered by The DeVilbiss Co., Toledo, Ohio. Its uses include degreasing, mist oiling, cleaning and touch-up painting.

The booth is equipped with a 15-gallon solvent tank with strainer and drain, a pull-out working tray, and a recovery system which provides substantial savings in solvents.

Tests show that the high pressure jet spray provided by a cleaning spray gun assures quick penetration of the solvents into all areas requiring cleaning; provides a flushing action, and removes dirt, grease and gummy deposits efficiently. Only non-inflammable solvent should be used in the booth.

The cleaning gun will also serve to blow off the solvent and dry the parts when the fluid tube is withdrawn from the supply tank. This feature also permits switching to clean solvent for use on a special part and then returning to the recirculating used material. Separate guns are used for mist oiling and for touch-up painting.

The air compressor, if required, and an air regulator with filter are available as accessories.

For more data, circle 8 on colored card.

New Paint for Polyolefins Offered by Bee Chemical

Bee Chemical Co., 2700 E. 170th St., Lansing, Illinois, introduced a new paint for polyolefins at the Ninth National Plastics Exposition in New York.

The new coating, P-38, is designed for use on flame-treated or chemically-oxidized polyethylene or polypropylene, and is available in a wide range of colors and metallics.

Transogram Midwest, Inc., Sturgis, Michigan, is using the paint on a new bowling set for youngsters, based on the popular TV characters, the Flintstones (see cut).

The paint has good adhesion to parts that have been passed over the blue portion of a highly-oxidizing flame.

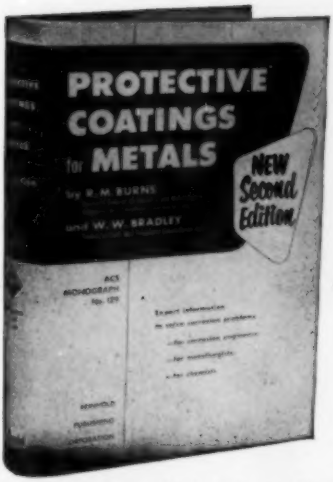
Bee Chemical reports the paint is a fast touch-dry spray coating with good mar resistance and excellent flexibility.

For more data, circle 9 on colored card.

Air-Powered Centrifugal Enameler Enameling Machine

A completely air-powered centrifugal enameler for applying paint, lacquer and many other types of coating to small parts, is announced by the Leon J. Barrett Co., P. O. Box 378, Worcester, Mass. According to the manufacturer, the use of air to pow-

Coats small parts rapidly and economically.



Contains the latest information on the composition, properties, and performance of metallic and organic coatings. New chapters are devoted to inhibitors, chemical conversion coatings, and sprayed coatings. Troublesome phenomena known as "silver migration" and "metallic whiskers" are fully discussed and latest practices in metal cleaning, coating application, and coating testing are explained.

CONTENTS

Principles of Corrosion and Corrosion Control; Surface Preparation for Coatings; Types of Metallic Coatings and Methods of Application; Sprayed Metal Coating; Production and Properties of Zinc Coatings; Protective Value of Zinc Coatings; Cadmium Coatings and Their Protective Value; Tin Coatings; Nickel and Chromium Coatings; Coatings of Copper, Lead, Aluminum, Miscellaneous Metals and Alloys; Coatings of Noble and Rare Metals; Methods of Testing Metallic Coatings; Organic Coatings—Chemistry and Composition; Organic Coatings — Performance and Evaluation; Application and Use of Protective Organic Coatings; Chemical Conversion and Anodized Coatings; Special-Purpose Coatings; Corrosion Inhibitors.

640 Pages . . . Price $12.00

INDUSTRIAL FINISHING
1142 N. Meridian St., Indianapolis, Ind.

Industrial Finishing and Common Sense

You will want to read and often refer to this new book by Eddie Zahn if you have anything to do with the materials, processes or equipment used in applying protective and decorative coatings to manufactured products. Ideas, suggestions and information revealed by Mr. Zahn are based upon 29 years of active experience and an association with many leading manufacturers.

The 18 chapters in this 344-page book contain: Selecting the Application Method, Specifications for Equipment, Process Costs, Paint Performance, Paint Material Cost, Testing Paint Materials, Surface Preparation, Film Thickness, Process Safety, Solvents and Reformulation, Paint User Management, and The Future of Industrial Paints, etc.

Mr. Zahn has written many articles on finishing and is the author of two other popular and informative books—"Flow Coating" and "Paint Evaluation."

This new book is securely bound in stiff covers 5½x8-in. Its color is black and red, lettered in gold.

Price, $9.00 per copy

Industrial Finishing Magazine

1142 N. Meridian St., Indianapolis 4, Ind.

er this machine provides several unique features.

The design complies with safety codes and provides full control over film thickness of almost any type of coating.

Although these enamelers were designed primarily for paints and lacquers, they can safely handle baking enamels, air-drying enamels, synthetic paints, liquid waxes, lubricants, rust inhibitors and many other types of new plastic films.

To provide easy handling of heavy loads by hand or by hoist, Barrett enamelers are top-loading, and because the entire operation is performed within the machine, there can be no spilled paint.

The entire system is simple to operate; filling and draining are controlled by a single valve; speed of rotation is adjusted by a needle valve; the same lever which locks the lid starts the motor. As a result, neither operating nor maintenance personnel need special training or skills.

For more data, circle 10 on colored card.

Coating Resists Heavy and Repeated Abrasion

A new coating with unusually high abrasion resistance and excellent resistance to a broad range of organic and inorganic chemicals has been announced by The Farboil Co., 801 Key Highway, Baltimore 30, Maryland.

This polyester isocyanate copolymer coating is called Curamene. It has been developed specifically for use on surfaces that are subjected to unusual abrasion conditions, such as hopper car interiors, ore buckets, conveyor buckets, coal and ore chutes, hoppers and chutes for handling bulk chemicals, interiors of marine cargo holds carrying dry chemicals, in the salt and fertilizer trades, on barge bottoms, etc.

The coating can be applied at a wide range of temperatures, is unaffected by high humidity while curing, and has a flash point over 100° F. It air dries to touch in two hours, can be recoated in four hours, where multiple coats are required, and reaches full chemical cure in five days.

Curamene is supplied as a 2-component material and is formulated as an exact one-to-one ratio of base to curing agent. Pot life is at least six hours after mixing.

One full coat of Curamene is considered satisfactory for most applications, but where extreme abrasion is anticipated, or where the coating may be subjected to liquid immersion for any length of time, additional coats may be applied.

For more data, circle 11 on colored card.

New Coatings Resist Chemicals Abrasion, Moisture, Weather

A new chemical barrier to corrosion is ready for the national market. Discovery of a linking agent provided the missing key to blending many resins into a whole new realm of products.

Result: The development of dozens of protective coatings against the destructive action of acids, alkalis, abrasion, moisture, weather and other harmful elements.

The new products, with a wide range of specific uses, will be marketed in many areas of industry. For example:

A new marine coating, tested on a fleet of boats, withstood erosion from water, sun and weather for over three years. It promises great re-

For more data, circle 202 on colored card.

duction in frequent, costly maintenance.

Another coating, a decorative, spray-on liquid sound conditioner, can be applied as a wall finish or sprayed over other acoustical materials which are soiled.

Developer of these and other new products is American Kylon Corp., 960 W. 48th Ave., Denver 21, Colo.

The linking agent contains a molecular trigger which combines previously un-blendable resin compounds. It can thus pack into any given coating protection against a wide variety of elements.

For more data, circle 12 on colored card.

Magnet Attraction Holds Parts for Spraying

They are not hung on pegs or by hooks, but these steel parts cling to the moving rack by magnetic attraction while being spray painted.

Instead of special, various-sized pin racks to hold auto trim moldings and other parts, Eriez Magna-Rax units were installed. Made by Eriez Mfg. Co., Erie 6, Penna., Magna-Rax hold large or small parts without special positioning or attachments.

Positive magnetic attraction, where there is a minimum of surface contact, prevents parts from falling or floating off during painting, degreasing, dipping or other operations. Each stainless steel cylinder contains a powerful, permanent, non-electric Erium magnetic element which requires no maintenance and lasts indefinitely. Versatile Magna-Rax units are available in standards or custom-designed models; they reduce rack inventory and eliminate work delays caused by parts falling off old-style pin racks.

Cling to the rack by magnetic attraction.

For more data, circle 13 on colored card.

Liquid Neoprene Coating

Development of a new, improved liquid Neoprene protective coating is announced by Adhesive Products Corp., 1660 Boone Ave., New York 60, N. Y. Designated APCO Liquid Neoprene Coating, it is DuPont Neoprene rubber in an easy-to-use liquid form, which can be applied by brush, spray or paint roller. APCO dries in minutes, forming a continuous rubber film on metal, wood, plastic, concrete and other surfaces, which is impervious to fresh and salt water, oils, gasoline, naphtha, acids and alkalies and other chemicals.

APCO Liquid Neoprene Coating is permanently flexible and will not peel, blister or crack under changing climatic conditions. It offers prolonged protection against rust, mildew, fungus, sunlight and humidity, and is ideal for protecting and weatherproofing a wide variety of materials.

For more data, circle 14 on colored card.

Compressed Air Dryers

To meet specifications frequently received for compressed air dryers of intermediate capacities, Van Products Co., 5700 Swanville Rd., Erie, Penna., is adding three new sizes to its line of Van-Air Dryers.

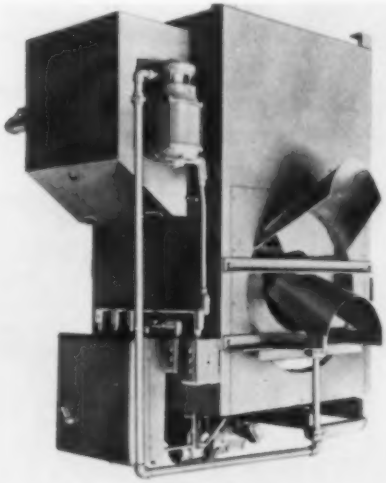
For more data, circle 15 on colored card.

A-F Small Parts Batch Washer

The Alvey-Ferguson Co., Cincinnati 9, Ohio, reports wide industrial acceptance of its new, one man operated Small Parts Batch Washer, shown here. Small parts can be high-pressure-spray washed in bulk in this small, compact, rotary drum, batch type machine.

Parts are put into this new machine through the upper chute. A drum with helical spiral tumbles the parts gently, exposing all surfaces thoroughly to the high-pressure, fan-shaped spray inside the drum. The drum, perforated to permit draining of the solution, oil, chips and impurities, retains only the cleaned parts.

On completion of the cleaning cycle, the drum counter revolves for a rinse cycle for a predetermined time; then the automatic timer shuts off rinse and rotates parts for another pre-determined cycle; and finally discharges the clean, dry parts into a container by way of the lower chute.



It's 3-ft. deep; 4½-ft. wide, and 6-ft high.

Location of both chutes on the same side of the machine minimizes space requirements and permits installation against other machinery or walls.

For more data, circle 16 on colored card.

Soak Cleaner for Aluminum

An alkaline soak cleaner that does not contain silicates, but does not appreciably etch aluminum, has been developed by Enthone, Inc., of New Haven, Conn., subsidiary of American Smelting & Refining Co. Silicate residues, which remain after cleaning aluminum in silicated non-etching cleaners, are difficult to rinse and often interfere with subsequent anodizing, chromating, or bright dipping, leaving visible patterns on the work. Since this new product, Enthone Aluminum Cleaner NS-35, is silicate-free, these troublesome siliceous films are eliminated.

Aluminum Cleaner NS-35 removes light soil, marking inks, and light buffing compounds. It is a powered material which is dissolved in water at 2 to 8 oz. per gal. concentration. At operating temperatures below 150° F. it does not etch aluminum, while above 150°F. very mild, controlled etching can be accomplished.

For more data, circle 17 on colored card.

Easy-Strip Plastic Masking

Evens-Thompson Mfg. Co., Inc., 11360 Kaltz Ave., Center Line, Mich., formulators of hot melt plastic, masking and stop-off materials, announces a new, easy handling, quick-dip material that is reusable as many as six times.

The new product is a specially developed, cellulose acetate butyrate plastic, and is available in two grades —"Dip n' Strip Mask 4," for general

use, with a 350° to 360° F. dip temperature, and "Dip n' Strip Mask 3E," for more severe service.

The material is non-toxic, safe, and easily used by the average worker. It is unusually tough, flexible, and resistant to rough handling. It does not crack, craze, cobweb or divert electrical current.

A quick dip affords a tough .050-in. coating which sets up in 30 seconds or can be quenched in water for instantaneous setting. The material is easily and accurately trimmed with a sharp knife, and strips cleanly in one piece, after use, for return to the melting pot.

For more data, circle 18 on colored card.

Tilt Tumbling Barrels

Improved versions of the Baird "Electratilt" and "Hydratilt" barrel finishing units have been announced by C. B. Bennett, Sales Manager, Barrel Finishing Equipment Division, The Baird Machine Co., 1700 Stratford Ave., Stratford, Conn.

The two machines are identical except that the "Hydratilt" model has a manual hydraulic device for raising and lowering the barrel while the "Electratilt," as the name implies, is provided with power tilting.

Both the "Hydratilt" and the "Electratilt" can be fitted with a full range of barrels of different size, shapes and materials, including the standard wooden barrel, cast metal barrel, bottle barrel and others.

For more data, circle 19 on colored card.

Tilts 40° above and 35° below horizontal.

Coating for Foamed Plastic

Flood & Conklin, 132 Chestnut St., Newark, N. J., manufacturer of industrial finishes, announces the development of a new finish created specifically for foamed plastic products. "Acry-Dyl" is suitable for use and is compatible with Styrofoam, Dylite and other foamed plastic materials. It requires no primer, sprays on with the same equipment as ordinary finishes, and dries quickly.

To the plastic material, Acry-Dyl has been found to improve the scuff resistance of the foamed plastic and in particular to improve its ability to withstand temperature fluctuations. A technical data bulletin is available on request.

For more data, circle 20 on colored card.

Mirror Back Coating

Union Chemical Corp., 410 Frelinghuysen Ave., Newark, N. J., has worked out and tested new improved mirror backing to use over lead sulphite non-glare mirrors. The coating stands approximately 20% salt spray for 700 hours. The suggested bake is 7 minutes at 200° F. or higher. The coating material has excellent adhesion. It can also be used on the front surface of aluminum mirrors.

For more data, circle 21 on colored card.

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Use INDUSTRIAL FINISHING magazine's "Reader Service" return cards to obtain further information on products described and illustrated in the "Materials; Supplies; Equipment" section which precedes this page; also to receive further information on what manufacturers have to offer—literature, products, supplies, services, etc., as mentioned on the following pages.

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Industrial FINISHING

August, 1961, Issue

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Tack Cloth for Wiping Dust. It's available in different meshes, in envelopes, rolls or bulk. Lint free, wax free; no danger of spontaneous combustion. Bond Chemical Products Co., 2104 W. Fulton St., Chicago 12, Illinois.

For more data, circle 23 on colored card.

Uni-Clad Finish for Aluminum can be applied by dip or spray application; in clears, colors, flat or gloss. Has flexibility and will not chip or peel. Is resistant to salt-spray, chemicals and humidity. Good performance on other ferrous and non-ferrous metals. Samples available. Universal Paint & Varnish, Inc., Box 199, Bedford, Ohio.

For more data, circle 24 on colored card.

"GunJet No. 22HPSSTC" for hydraulic, high pressure spray coating and painting, gives efficient, trouble-free performance. Needle cleans seat orifice automatically. Can be used at pressures from 400 to 2000-psi. Complete choice of interchangeable orifice tips in all spray patterns, capacities and materials. Spraying Systems Co., 3240 Randolph St., Bellwood, Illinois.

For more data, circle 25 on colored card.

"Catalan" is the catalyst finish in either gloss or satin finish. Is tough, mar-resistant and waterproof; in clear and colors. Saves on baking cost and on forced air-drying time. Consult our laboratory staff technicians for advice on any finishing problem. J. Landau & Co., Inc., Carlstadt, New Jersey.

For more data, circle 26 on colored card.

"Spex" Multicolor One-Coat Finish by V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39, Ill., gives a combination of two or more harmonizing colors in one coat with standard spray equipment. For finishing wood, metal, plastic, concrete and all types of composition board. Hides surface irregularities. Color card showing assortment of sprayed (not photographed) multi-color combinations available.

For more data, circle 27 on colored card.

AG Paint Arrestor Pads catch and hold paint. These white fiberglas pads are non-clogging—less "drag" on your fans. Their holding capacity keeps your spray booths cleaner and cuts maintenance upkeep. American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky.

For more data, circle 28 on colored card.

Hardex Clear Lacquers for Brass give high gloss and can be applied by spray or dip; air dry to bake hardness; have good adhesion to polished brass; will not blush nor discolor, remains flexible. Hardex lacquers are made for all metal surfaces. New England Coating Works, Inc., 349 Bryant Ave., New York 59, N. Y.

For more data, circle 29 on colored card.

Dispo Spray Booths, by Binks Mfg. Co., 3120 Carroll Ave., Chicago 12, Ill., have 2250-sq. ft. of disposable "filters". Automatic curtain rolls away paint overspray. Is economical, safe and automatic. Bulletins A-27-14 & 15 give complete details.

For more data, circle 30 on colored card.

Perfex Satin Finishes needs no rubbing. The "flat" finish has a rubbed appearance and waxed feel. Is quick setting, drying and is water and liquor proof. Available in a full range of sheens. Eliminates costly rubbing operation, yet gives a rubbed-effect finish. Perfection Paint & Color Co., Indianapolis 2, Indiana.

For more data, circle 31 on colored card.

"Nacromer" Synthetic Pearl Essence adds sparkle, highlights and richness to an otherwise ordinary coating. Nacromer is compatible with most coating vehicles and can be applied to practically any material by the usual coating methods. 8-page Nacreous Pigment Handbook contains information on natural and synthetic pearl essence. The Mearl Corp., 41 East 42nd St., New York 17, N. Y.

For more data, circle 32 on colored card.

Solvents and Chemicals, from bulk shipments to drum lots are available from 21 plants located conveniently throughout the United States. These on-the-spot facilities mean faster delivery, economical prices and helpful services. Contact the member of Solvents & Chemicals Group nearest you for quick service. The Solvents and Chemicals Group, 2450 W. Flournoy St., Chicago 12, Ill.

For more data, circle 33 on colored card.

Fast Strippers, Lea "Coldstrip" and "Synstrip" are clean working and non-corroding. These strippers break the bond between metal and organic coating; do not dissolve lacquer or enamel. Complete technique information available. The Lea Mfg. Co., 16 Cherry Ave., Waterbury 20, Connecticut.

For more data, circle 34 on colored card.

REPRINTS AVAILABLE

Price, 10 cents per copy.

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"Stains and Their Use in Wood Finishing"
"Preparation of Particle Board for Painting or Finishing"
"Fine Wood Cabinet Finish Applied on Conveyor Line"
"Butyrate Topcoat Lacquer Used in Furniture Plant"
"Gulbransen's Piano Finish"
"Finishing Wood Turnings in a Tumbling Barrel"
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• REPROCESSED in our plant to conform to its original specification, in both physical and chemical properties, paint waste overspray or sludge can be used again in regular production at considerable savings. Our more than 21 years' experience is customers' guarantee of satisfaction.

PRIMERS—WHITES—COLORS—

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Mixed color sludges can be converted to primers.

W. C. RICHARDS CO., 3108 W. Vermont St., Blue Island, Ill.
California Plant: 401 Julianna, Anaheim, Cal.

For more data, circle 203 on colored card.

Gold, Copper and Aluminum are now available in Cres-Lite brilliant, metallic bronze powders. Color card showing the 44 colors now available is free upon request. Special or matched colors can be made. Crescent Bronze Powder Co., 118 W. Illinois St., Chicago 10, Illinois.

For more data, circle 35 on colored card.

Exposure Test. Actual weathering, corrosion and sunlight tests, direct and under glass for quick predetermination of durability and permanency in southern Florida by South Florida Test Service, Inc., 4301 N. W. 7th St., Miami 44, Fla.

For more data, circle 36 on colored card.

"Polymac" Polyester Finish is a burn-proof durable low-cost finish. Can be sprayed or curtain-coated; is print free in 50 minutes. Can be rubbed to mirror-gloss, semi-gloss or dull sheen and has glass-like hardness. Can stand severe usage. Polymac finished panels will be sent on request. Lawrence-McFadden Co., 7430 State Road, Philadelphia 36, Penna.

For more data, circle 37 on colored card.

Instant Stripper—For metal or wood finishes. A non-flammable, non-toxic stripper which removes almost instantly, most finishes—enamels, either lacquer or synthetic (baked or air dried), paints, varnishes, etc. V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39, Illinois.

For more data, circle 38 on colored card.

Guardsman Styled Furniture Finishes are offered by the Grand Rapids Varnish Corporation, Grand Rapids, Mich., emphasizing refreshingly new decorator hues like many toned coffee-walnut, dramatic ebony, rich mahogany and fruitwood cherry.

For more data, circle 39 on colored card.

IDEAL TACK RAGS
FOR A PERFECT FINISH
Bulk, Bagged and Rolls
IDEAL CHEMICAL COMPANY
1499 Dean Drive
South Euclid 21, Ohio

For more data, circle 235 on colored card.

Tack Rags for use prior to painting, to wipe off and hold dust and dirt particles too small to see, but which might leave a blemish on the final coat of paint or finish, are available from Ideal Chemical Co., 1499 Dean Drive, South Euclid 21, O.

For more data, circle 40 on colored card.

Aerosol Finishes — custom-loaded by Sprayon—never vary in color or performance, as they are tested and proved in Sprayon's quality-control laboratory where paint chemists and paint technicians make sure of this fact. All test data, materials and samples are dated, coded and filed for future reference. Sprayon Products, Inc., 2605 E. 65th St., Cleveland 3, Ohio.

For more data, circle 41 on colored card.

Super Nubelite thermosetting acrylic finish cuts paint bake time in half. One-coat Super Nubelite finishes are available for refrigerators, freezers, and fluorescent light fixtures. Two-coat finishes are being used on washers, dryers and other electrical appliances. Complete information on both the one-coat and two-coat finishes available. The Glidden Co., Industrial Paint Divn., 900 Union Commerce Bldg., Cleveland 14, Ohio.

For more data, circle 42 on colored card.

"Rock-A-Drum", the vertical drum truck picks up 55-gal. drums, rolls them over for side draining and becomes a stand on 3-in. wheels. Tilts the drum for pouring contents easily. Morse Mfg. Co., Inc., 763 W. Manlius St., East Syracuse, N. Y.
For more data, circle 43 on colored card.

Electric and Gas Infrared Ovens provide uniform heat. Heat is transmitted directly to the work, no bulbs or tubes to burn out or break, and are adaptable to any conveyor or system. Copies of "The Story of Modular Infra Red Ovens" free upon request. Infra-Red Systems, Inc., 240 Route 23, Riverdale, N. J.
For more data, circle 44 on colored card.

"Dulux 100 Enamel" resists blistering, chipping and cracking despite hard wear and temperature extremes. By actual tests, Dulux 100 holds its luster three times longer than former outside enamels. Is hard, tough and mar-resistant. Recommended for vending machines for outdoor use. The DuPont Co., 2502 Nemours Bldg., Wilmington 98, Dela.
For more data, circle 45 on colored card.

Aerostat Static Eliminator permits large, odd-shaped parts to pass through the airstream of the Aerostat and instantly become completely neutralized. Can be effective at distances up to 3-ft. Removes static effectively at molding stations, conveyor lines, etc. The Simco Co., 920 Walnut St., Lansdale, Penna.
For more data, circle 46 on colored card.

Metal Coatings for your standard requirements or for the solution to a unique problem, can be formulated in the modern research laboratories of Gordon Bartels Co., 2600 Harrison Ave., Rockford, Ill. Bartels Metal Decorating coatings have the consistent order-to-order uniformity. For metal decorating problems consult Gordon Bartels Co.
For more data, circle 47 on colored card.

"Armorsol" is a workable abrasion resistant vinyl finish for the price of baked enamel. Can be used on automotive and aircraft applications, business machines, thermosetting plastic parts and metal furniture. Will adhere to metal without primer, and can be applied with standard painting equipment; will not discolor. Bulletin describing "Armorsol" and sample panel available. John L. Armitage & Co., Newark, N. J.
For more data, circle 48 on colored card.

Electric Knife Heaters and Burn-in Tools for making quick and skillful repairs to nicked, dented or scratched finishes. The Op-Al Electric & Mfg. Co., 3133 Martindale Ave., Indianapolis 5, Indiana.
For more data, circle 49 on colored card.

Non-Grain-Raising Stains, lacquers and everything for finishing fine furniture, cabinets, pianos, etc., plus styling and technical service—in Southeast U. S. A., are available from Snyder Bros. Co., P. O. Box 631, Toccoa, Georgia.
For more data, circle 50 on colored card.

"Electro-Cold Stripper" will strip vinyls, alkyds, japans, hammers, primers wrinkles, enamels and epons in minutes. Is non-flammable, requires no heat or current. Complete data and testing sample free on request. Allied Finishing Specialties Co., 2614 W. Grand Ave., Chicago 12.
For more data, circle 51 on colored card.

Multi-Color Wood Grain Printing, with Model MC-H158, gives a true-to-life appearance. This particular model prints two perfectly-registered colors simultaneously. Other models are available for every purpose. Hamant Tool Co., Inc., 502 Warren St., Dayton 9, Ohio.
For more data, circle 52 on colored card.

Dupor No. 4 Respirator has double filters for easy breathing and greatest filtration of paint spray, dust and fumes. Soft rubber face mask gives an air tight fit. Patented Dupor valves bring in clean air and throw off breathed air. Weighs only 4-oz. H. S. Cover Co., P. O. Box 2508, South Bend 14, Indiana.
For more data, circle 53 on colored card.

Paint Overspray can be reprocessed in our plant to conform to its original specification in physical and chemical properties. Paint waste overspray or paint sludge can be used again in regular production at considerable savings. Mixed color sludges can be converted to primers. W. C. Richards Co., 3108 W. Vermont St., Blue Island, Illinois.
For more data, circle 54 on colored card.

Paint Strainers for straining lacquers, enamels, paints or varnishes. Made of heavy paper stock with cloth inserts in coarse, medium, fine and extra fine mesh, 6-in. in diameter. Louis M. Gerson Co., Box 175A, Mattapan, Mass.
For more data, circle 55 on colored card.

Finishes Consultant, with no supplier affiliations, can give you a 4-day "consulting package." Complete process analysis with detailed equipment specifications can be given. E. A. Zahn, 3502 Hillsboro Court, Louisville 7, Ky.

For more data, circle 56 on colored card.

Complete Plywood Finishing System offered by The O'Brien Corporation, South Bend 21, Ind. The system authentically reproduces any expensive or exotic wood grain or pattern, in any color, by upgrading low-cost, readily available plywood. The complete process includes O'Brien fillers, groundcoats, graining inks and topcoats.

For more data, circle 57 on colored card.

Industrial Finishes, especially formulated for your production line and products, give your products a salable appearance. For a perfect protective and decorative finish for your purpose, consult the Rockford Varnish Co., Rockford, Illinois.

For more data, circle 58 on colored card.

No. 2 Process Electrostatic Hand Guns provide up to 75% paint saving. Electrostatic finishing is faster because the "wrap-around" characteristic of Electro-Spray paints all areas with a pass from one side only. No. 2 Process brochures giving complete information on Ransburg Electrostatic hand guns is available from Ransburg Electro-Coating Corp., Box 23122, Indianapolis 23, Ind.

For more data, circle 59 on colored card.

Automatic Viscosity Control for spraying, flow coating and dipping improves quality of painting and finishing by providing continuous uniformity of paint material. Norcross Corp., 247 Newtonville Ave., Newton 58, Massachusetts.

For more data, circle 60 on colored card.

Epoxies, Baking Enamels, Lacquers, Pearlescent, Uni-Vac, and Hammermark, are just a few of the "Specialization" finishes by United Lacquer Mfg. Corp., Linden, N. J. Free working samples, technical brochure and Technical Consultation Service available on request.

For more data, circle 61 on colored card.

Industrial Finishes with eye-appeal and buy appeal, are formulated by Cook Paint & Varnish Co., Kansas City, Mo. Coatings for both inside and outside of cameras and projectors are a specialty.

For more data, circle 62 on colored card.

Wood Grain Reproducing Equipment, in 60 different types and models, is available from Schmutz Mfg. Co., 1600 W. Main St., Louisville 3, Ky. Machines for printing metal, masonite or wood cabinets automatically. Visit the plant, see machines under construction and doing actual work on the test floor. Roller coaters also available.

For more data, circle 63 on colored card.

"Pearl Glo" Synthetic Pearl Pigment can be sprayed or dipped on any sealed surface of plastic, metal, wood, leather, paper, etc. Can also be incorporated into acrylics, polyester, vinyl, etc. Gives a pearl finish at low cost. Sample available. Specify application and choice of vehicle. Argenta Products Co., 74-80 Forrest St., Jersey City, New Jersey.

For more data, circle 64 on colored card.

"driQuik" Infra-Red Ovens have no bulbs or sockets to burn out; temperature can be set to within 1 degree of heat desired; maintenance costs are at a minimum. Can be used on products of wood plywood, hardboard, etc. Field test equipment available to show you what can be done with your product and finishes. Dry Clime Lamp Corp., Greensburg, Indiana.

For more data, circle 65 on colored card.

Formulated Finishes by Randolph Products Co., Carlstadt, N. J., can be for bowling pins, typewriters, furniture, toys, plastics, panelboard, etc. Exactly-right industrial coatings by Randolph give your product sales appeal. Finishing problems are Randolph's specialty.

For more data, circle 66 on colored card.

Aluminum Tinting Pastes add color, sparkle and brilliance to your finish. Pastes 225 and 226 are for the automotive and product finish manufacturers. Other pastes are available for polychrome finishes. Samples of Alcoa's tinting pastes are available upon request. Aluminum Co. of America, 1757-H Alcoa Bldg., Pittsburgh 19, Penna.

For more data, circle 67 on colored card.

Interlox Spray Process by Northwest Chemical Co., Detroit 4, Mich., now assures high efficiency phosphate coatings without precleaning, even at low temperatures. Northwest's consulting engineers will survey your operation and submit recommendations at no obligation.

For more data, circle 68 on colored card.

New, Enlarged 2nd Edition

THE NEW enlarged second edition of George A. Soderberg's excellent fast-selling book, "Finishing Materials and Methods" is now ready. It contains 382 beautifully printed pages 6x9-in., 225 illustrations, and is divided into 36 chapters. In the last 12 pages, all subjects in the book are alphabetically indexed. The book is substantially and attractively bound with the front cover design printed in three colors—light blue, black and red.

The first 24 chapters, all illustrated, take up materials—everything used in finishing—paints, varnishes, enamels, lacquers, synthetics, shellac, stains, fillers, bleaches, multicolor finishes, hammer-effect and wrinkle materials, luminescent paints, wax, polish, flock, tack cloth, tape, abrasive paper, varnish remover, etc.

The remaining chapters, also well illustrated, take up all finishing methods, for example, dipping, spraying, flow coating, roller coating, tumbling, electrostatic and drying. One chapter deals with the important subject of color; another offers "Safe and Recommended Practices in the Finishing Department."

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Water-Soluble Melaqua 600 Melamine-Acrylic Resin is non-flammable yet delivers high gloss, hard finish, resistance to weather and heat. Melamine resin makes Melaqua 600 hard and solvent-resistant. Acrylic polymer produces smoother films and cleaner, brighter colors. Melaqua 600 is the first of a new family of water-dispersed thermosetting industrial coating resins. American Cyanamid Co., Plastics & Resins Div'n., 30 Rockefeller Plaza, New York 20, N. Y.

For more data, circle 69 on colored card.

Electric Infrared Processing Equipment now provides temperatures from 1° to 3000°F. for any industrial application where heat is required. For temperature requirements under 900° F. send for folder, "Applications Unlimited." For temperature requirements from 900° to 3000° F. get folder entitled, "Breakthrough." The Fostoria Corp., Fostoria, Ohio.

For more data, circle 70 on colored card.

Power Spray Washers by The DeVilbiss Co., Toledo 1, Ohio, come completely assembled and ready to hook up. Washers can be tailor-made for your job; the size of your work, the chemicals, kind of soil to be removed or surface treatment necessary.

For more data, circle 71 on colored card.

Ovens, Dryers, Controls and Handling Equipment can be engineered and installed by J. O. Ross Engineering, New York 17, N. Y. A compact and efficient finishing system for your product and finishing methods in your allotted space can be set up skillfully and economically.

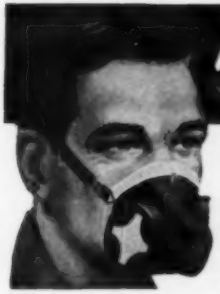
For more data, circle 72 on colored card.

Polystat Electrostatic Spray Enamels, lacquers, epoxies and thermoset acrylics are versatile and practical. Polystat comes in hammer, textured, metallic and smooth and is made to serve your use. Duralac Chemical Corp., 84 Lister Ave., Newark 5, N. J.

For more data, circle 73 on colored card.

Butoa Resins contribute to low-cost, long-lasting protective metal primers. They possess excellent hardness, toughness and flexibility together with resistance to detergents, salt spray, boiling water and many acids and alkalis. Provide good adhesion with conventional top coats on steel, tin plate, aluminum and various light metals. Enjay Chemical Co., 15 W. 51st St., New York 19, N. Y.

For more data, circle 74 on colored card.



PROTECT LUNGS *against* PAINT SPRAY – DUST – FUMES

DUPOR No. 4 RESPIRATOR has big double filters for easy breathing and greatest filtration! Soft rubber face mask gives airtight fit. Patented DUPOR valves bring in clean air—throw off breathed air! Weight 4 oz. Economical! Costs only **$2.25** postpaid. Order Now!

H. S. COVER CO., Dept. 810, South Bend 14, Ind.

For more data, circle 204 on colored card.

Air Dry No. 8A Clear Lacquer is being used successfully by architectural, bronze and maintenance companies. Can also be used for aluminum. Agate Lacquer Mfg. Co., Inc., 11-13 43rd Road, Long Island City 1, N. Y.

For more data, circle 75 on colored card.

One-Step Fume Elimination and valuable heat recovery for a wide range of chemical and industrial processes is provided by a compact catalytic combustion system by Catalytic Combustion Corp., 4725 14th St., Detroit 8, Mich. Free brochure on heat recovery and air correction is available.

For more data, circle 76 on colored card.

BC Chromic Acid (flake) is available from Better Finishes & Coatings, Inc., 268 Doremus Ave., Newark 5, N. J. Every batch is checked, and every can filled with a full weight of extra-high quality Chromic Acid. Prompt delivery from factory and nearby distributor stocks.

For more data, circle 77 on colored card.

Restore Paint to its original consistency without opening the container, whether in ¼-pint cans or in 55-gallon drums. Time required is only 2-minutes per gallon. Full information from Miracle Paint Rejuvenator Co., 128 E. 10th St., St. Paul.

For more data, circle 78 on colored card.

"Bull Dog Shaker," Model 4, conditions paint to brushing consistency in one to 5-gal. cans, without opening the can. Time required is from two to 30 minutes, depending on paint formulation and length of time paint has been on the shelf. Easy to operate. Grenier & Co., Inc., 13142 Rexford St., Blue Island, Ill.

For more data, circle 79 on colored card.

paint strainers
FOR STRAINING LACQUERS ENAMELS, PAINTS OR VARNISHES
Made of heavy paper stock, with cloth inserts in coarse, medium, fine or extra fine mesh. 6 inches in diameter.
LOUIS M. GERSON CO

For more data, circle 236 on colored card.

Collapsible Tube Finishes by Cosden Paint Co., Beverly, N. J., are color-perfect and adaptable to severe flexing, twisting and crimping. Coatings are non-toxic and chemical resistant; can be applied by various application methods.

For more data, circle 80 on colored card.

Silk Screen Enamels with maximum adhesion and gloss are available in the 5900 Series Synthetic Gloss Enamel and the 800 Series Weatherproof Enamel. Free catalog on these enamels and their uses available from the Naz-Dar Co., 461 Milwaukee Ave., Chicago 10, Ill.

For more data, circle 81 on colored card.

Pearlescent Finishes, air dry or bake, for products of metal, plastic, wood or glass are available from Rona Pearl Corp., E. 21st & 22nd Sts., Bayonne 2, N. J. 12-page Technical Brochure and convenient wall chart on natural and synthetic pearl pigments available upon request.

For more data, circle 82 on colored card.

HydroAirless with the H-Gun gives improved coverage, faster application, reduced overspray, 30% reduced booth cleanout time, savings in finishing cost, and high quality finish. Spee-Flo Co., 6614 Harrisburg, Houston 11, Texas.

For more data, circle 83 on colored card.

"Gripalloy" Primer for 25 Metals is available in black and colors; excellent adhesion . . . and resistance to salt spray and solvents. Cuts pre-treatment costs in half. Tenax Finishing Products Co., 390 Adams St., Newark 14, N. J.

For more data, circle 84 on colored card.

Pre-Fab Oven Panels by George Koch Sons, Inc., Evansville 4, Ind., can be assembled to form your own batch ovens or conveyor ovens. Panels in 3-in, 4-in. and 6-in. thickness are available. Accessories such as doors, heaters, flashing, hardware, etc., can be supplied. Write for File H.

For more data, circle 85 on colored card.

IC Paladin Primers stick to just about anything and provide a tough, flexible bond for lacquers, air-dry or baking enamels, vinyls and practically any other type of finishing coat. Dries fast and can be recoated in less than an hour. Available in black, gray, aluminum, zinc chromate and clear. Having adhesion problems? Contact Interchemical Corp., Finishing Divn., 224 McWhorter St., Newark 5, N. J.

For more data, circle 86 on colored card.

MD 737 Extra-Fine, Super-lustre Aluminum Paste Pigment is designed specifically for spray applications and industrial coatings. This pigment yields films of exceptional smoothness and chrome-like appearance. Can be used for the pigmentation of aerosol paints because of the mirror-like character of the finish. Metals Disintegrating Co., Dept. 3, Elizabeth B, New Jersey.

For more data, circle 87 on colored card.

Airless Hydrostat Paint System requires no heat, less air consumption, can be used inside or out and is fog-free. Pump operates from original container and provides a continuous even flow of paint at a constant pressure. Free catalog upon request. Alemite Divn., Stewart-Warner Corp., 1850 Diversey Pkwy., Chicago 14, Illinois.

For more data, circle 88 on colored card.

Complete Three-Stage "Triclene" Finishing System — degreasing, phosphatizing and painting—was adopted by one of the large automobile manufacturers, and is being featured by E. I. duPont deNemours & Co., Inc., Electrochemicals Department, Wilmington 98, Del. Major advantages offered are: low investment, economy of operation, reduced plant space, non-flammable, and versatility. Complete details on request.

For more data, circle 89 on colored card.

Steinemann Pressure Curtain Coater applies all finishes uniformely to practically any size or shape of products. There is no waste; unused material is recovered by a recirculating system. For additional information write Wilco Machine Works, Inc., Municipal Airport, Box 2897 IF-8, Memphis 14, Tennessee.

For more data, circle 90 on colored card.

New Savings in Enamel Paint Spraying. A new system for spray painting, using Hi-Sol Enamel reducer, produces savings up to one-third, according to Potter Paint Co., Inc., Cortland, N. Y., and Cambridge City, Ind. The H.S.R. System (Hi-Sol Reducer) lowers the cost per gallon of ready-to-use mix by using more of the special reducer with less air pressure. Puts more paint on the product—less on the booth. The special Hi-Sol Reducer increases coverage per gallon at required mil thickness and achieves desired finish quality, according to the manufacturer.

For more data, circle 91 on colored card.

Synflex Universal Paint Spray Hose is flexible, light and economical. Has abrasion resistance, can be used for hot or cold spraying, has high strength, handles all finishes. Comes in 500-ft. reels. For all of your paint spray hose needs contact Samuel Moore & Co., Synflex Products Divn., Mantua, Ohio.

For more data, circle 92 on colored card.

Mirror-Bright Aluminum Finish. A rubber based adhesive provides the "grip" required for development of a new, highly reflective metal that can be bent, drilled, punched, crimped or formed for a wide variety of uses.

Various types of lighting reflectors, decorative trim for radio and TV cabinets, appliances, automobiles, vending machines, flashlight and flashbulb reflectors are among the many uses predicted for a specular or optical finish reflector sheet called "Dynasyl."

Developed by the W. J. Ruscoe Co., Akron, Ohio, Dynasyl consists of metallized polyester plastic film that is permanently bonded to aluminum sheet with a high strength adhesive produced by Goodyear's Chemical division.

Something to Know About Paint Masks

DO YOU, or does the supervisory personnel in your painting department, know about the various kinds and types of masks that are available to protect certain areas of products against paint; or machined or polished surfaces against scratches? There are peelable coatings that can be sprayed on, to protect certain sections of the surface. or the entire surface. These temporary coatings are offered in almost any desired color or tint for identification —as well as in clear.

Then there are pressure sensitive tapes in roll form in any reasonable width, and in die-cut shapes to fit any special area of the product. The die-cut masks are available in cut stencil form to make numbers, letters, trademark insignia, etc.

Pressure sensitive tapes in die-cut shapes come in both paper and cloth backing, single and double-faced (adhesive on both sides); in plastic, high and low temperature, waterproof, non-staining; and in color and transparent. Colors may be used for identification. In those cases where parts or products contain certain code numbers or letters, for instance, to separate rights and lefts, the clear or transparent tape will not obstruct the view.

Don't overlook the merits and economy of die-cut masks. They cost more than tape, but they make for fast application, thus reducing your masking cost.—*P. C. Bardin.*

more than 20,000 copies every issue

Yes, more than 20,000 copies of Industrial Finishing magazine are printed and circulated to industry each month, largest in its history.

Who receives these copies?

These copies are directed to those manufacturing concerns that operate finishing departments for the application of organic finishes to products which they make. *Industrial Finishing magazine is the only publication devoted exclusively to this phase of industrial production activity.*

Who reads these copies?

Because of its specific editorial appeal, these copies of Industrial Finishing magazine are read by the company executives, production superintendents and engineers, process engineers, chemists, purchasing agents, paint shop and finishing department foremen—those individuals who have an active responsibility in the selection, purchase and use of organic finishes, paint application equipment, paint drying and baking ovens, surface cleaning chemicals and equipment, and other items allied with product coating operations.

That's the picture. NOW, more than 20,000 copies printed and distributed each month.

Color Planning

for business and industry...

How to use color effectively, economically and profitably in your factory, office, products, packaging, displays, stores, advertising, home—everywhere. This information is presented in easy-to-read style by a man who has been a color specialist for 30 years, Mr. Howard Ketcham.

A few of the subject divisions in the book: How to plan the colors for your product, color for better marketability, new color in place of new design, how many colors, hints on color and design, where does product color go from here, color and safety, some easy rules to follow, what color can do for you, which type of light, how camouflage works, the uses of color through the ages, etc.

As Director of the Color Advisory Service of the DuPont Co. back in 1932, Mr. Ketcham created the original Duco automobile colors, and his color plans were featured in more than 70% of U. S. automobiles. He also introduced the first market testing procedures for predetermining consumer color preferences. After World War II he color-designed everything from packages, products and trademarks to homes, stores, trucks, railroad cars and even jets. In three years alone, A. T. & T. sold 10 million of his colored telephones, and U. S. Steel hired him to modernize and reduce (from 40 to 9) its color line which contributed to the company's 40% increase in sales that year.

The book contains 282 pages, including 8 color plates, 6¼x9½-in., is divided into 19 chapters, contains an alphabetical index and table of contents, and is substantially bound in heavy stiff covers of black and light blue letters in red and gold. To leaf through this remarkable book you would estimate it to cost at least ten dollars, but actually the retail price is only $5.95, postpaid.

INDUSTRIAL FINISHING

1142 N. Meridian Street, Indianapolis 4, Ind.

Freon Solvents; AutoSonics

Selectivity, high volatility, ease of recovery, and excellent penetrating and cavitating properties of "Freon" solvents as precision cleaning agents have been put to work in a series of advanced design automatic cleaning machines introduced recently by AutoSonics, Inc., 4217 Chestnut St., Philadelphia 4, Pennsylvania.

"Freon" solvents are being used extensively in industrial cleaning operations. Nonflammable and virtually nontoxic, they remove most dirt and grease quickly, yet are so safe they are used in cleaning delicate gyroscopes and precision equipment.

It is these characteristics, plus adaptability to fast recovery and reuse through air recirculation, that make "Freon" especially useful in the new degreasing and cleaning equipment developed by AutoSonics. These machines which are trademarked "AutoSonex" are designed to process metal parts and electronic components and assemblies on a continuous flow basis.

For more data, circle 93 on colored card.

Vinyl-Urethane Coatings Protect Crop Dusting Planes

A new vinyl-urethane coating system has been evaluated and accepted as the standard protective finish for the Grumman Ag-Cat, a plane specifically designed for aerial application of agricultural chemicals.

Produced by Carroll Products, Inc., of Farmingdale, N. Y., the vinyl-urethane coatings provide a solution to a unique set of problems. Metal and other materials used in the construction of the plane must be protected against a variety of corrosive dusts and liquid chemicals that are applied from the air. Spray-back from the nozzles exposes the surface

of the plane to water and oil solutions containing chlorinated organic chemicals, ammonia, emulsifiers, and metal salts.

Further complications are added by the temperature extremes which are experienced, some parts of the plane especially near the engine running at very high heat.

Under such varying conditions, the new coating has proved to have excellent chemical resistance and weatherability. Good adhesion and flexibility are maintained over a long operating life.

The Carroll vinyl-urethane coatings are sold as 2-part solvent systems.

For more data, circle 94 on colored card.

New Type Rust Remover

Aci-Gel, an entirely new type of rust remover, is a multi-acid material which removes rust to bare metal by chemical action.

Aci-Gel, suspended in a thixotropic gelling agent, clings to vertical surfaces, will not sag. For further information, write Sloan Chemicals, Inc., Caxton Bldg., Cleveland 15, O.

For more data, circle 95 on colored card.

For Controlling the Gloss in Various Finishes

"Phlats," a complete series of gloss controllers for clear and pigmented finishes, are being produced and sold by LoBo Chemical Products Co., 214 Northfield Rd., Bedford, Ohio. The line includes the following:

ure-Phlat for polyurethane finishes
so-Phlat for short oil alkyds
mo-Phlat for medium oil alkyds
la-Phlat for nitrocellulose lacquers
e-Phlat for epoxy esters

These companion products are the result of a unique method of dispersing a finely dividend silica in a wide range of vehicles. They were developed to achieve a consistent uniformity of sheen in pigmented or clear satin finish formulation. They will eliminate a costly grinding operation and insure non-settling and non-seeding in the most critical formulas. Technical data sheets and samples from production batches are available by writing to LoBo Chemical Products Company.

For more data, circle 96 on colored card.

Automatically Paints Interiors of Tubular Products

Spraymation Model C-18 Conduit Interior Coating Machine applies lacquers, enamels, waxes and similar materials to the interiors of pipe and conduit. In one setup the machine is painting 10-ft. lengths of ½

"TOMORROW'S Products Tested TODAY"®

A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.

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For more data, circle 237 on colored card.

INCREASE PRODUCTION! CUT COSTS!
Your paint is factory fresh ready for use when mixed in a
MIRACLE PAINT MIXER
5 GAL. MODEL
¼ Pt. to 55 Gal. Mixers Available
Write to:
MIRACLE PAINT REJUVENATOR CO.
500 NORTH ROBERT STREET ST. PAUL 1, MINNESOTA

For more data, circle 238 on colored card.

through 4-in. conduit. Speeds of up to 60 pieces per minute are obtainable for the smaller sizes.

Fully automatic, the machine receives conduit in a hopper, positions it and checks for correct length and location, clamps and shields it before spraying, and runs spray lances completely through each piece of tubing so that a complete accurate coverage can be obtained. The machine uses hydraulic, pneumatic, and electrical equipment for indexing and checking. The coating material is supplied to the spray lances from a pump circulating system.

The manufacturer is Spraymation, Inc., 25 Amity St., Little Falls, N. J.

For more data, circle 97 on colored card.

Spray Painting Brochure Offered By J. Holland & Sons, Inc.

A new, illustrated 4-page brochure describing 19 different basic types of polishing and spray painting equipment available from J. Holland & Sons, Inc., is being offered free. Write J. Holland & Sons, Inc., 475 Keap St., Brooklyn 11, New York.

For more data, circle 98 on colored card.

Dust Collectors Improved

Chicago Air Filter Co., 4125 W. Washington Blvd., Hillside, Ill., manufacturer of industrial dust collectors, announces important improvements in the new model A-6, resulting in far greater capacity than heretofore available. The machines are designed to remove and collect dusts produced in grinding, buffing and polishing operations.

For more data, circle 99 on colored card.

Guide to Cost-Cutting Tapes

A new 44-page guide to Mystik Brand pressure-sensitive tapes has just been published. To obtain your copy of "Mystik Tapes Keep Costs Down!", write: Marketing Manager, Industrial Division, Mystik Adhesive Products, Inc., 2635 N. Kildare Ave., Chicago 39, Illinois.

For more data, circle 100 on colored card.

Make-up Air Systems

A 16-page make-up air systems catalog depicting six basic types of Sun-Flo direct gas-fired make-up air units, in a total of more than 40 models with capacities ranging from 5000-cfm. with 750,000 Btu/hr to 150,000-cfm. with 15,000,000 btu/hr (for roof-top, ceiling or wall mounting), is available from Metals Engineering & Mfg. Co., Inc., 8824 Lyndon, Detroit 38, Michigan.

For more data, circle 101 on colored card.

For Steam-Detergent Cleaning

A compilation of the most modern methods and materials currently used in steam-detergent cleaning is presented for quick reading in a new, illustrated booklet just released by Oakite Products, Inc., 132F Rector St., New York 6, N. Y., manufacturer of specialized chemical compounds for industrial cleaning and related operations.

The booklet, entitled "How To Get The Most Out of Steam Cleaning With Oakite Specialized Detergents," offers valuable tips on steam cleaning in general and lists the six essential properties which all effective detergents used in steam cleaning should have.

Free copies of the booklet are available from Oakite Products, Inc.

For more data, circle 102 on colored card.

Rust Control During Production

An 8-page guide to controlling rust during production operations, has been incorporated into a Rust Control Data File being offered free of charge by Magnus Chemical Co., Inc., Garwood, N. J.

The guide details the known and little-known causes of rust, the six factors vital to successful rust control, the many specialized rust prevention products which are available and methods of selecting the proper rust preventive for specific operations and degrees of control.

For more data, circle 103 on colored card.

Metal Spray Masks Shown

A new brochure which describes and illustrates all types of electro-formed metal spray masks for accurately controlled multiple-color wet-paint decora-

tion and protective coating of mass produced parts has just been made available by Conforming Matrix Corp., 765 New York Ave., Toledo 11, Ohio.

It covers block cut-out plane surface masks, cap-type masks for capping raised areas, plug-type masks for protecting depressed areas, lip-type masks for painting sunken areas, and magnetized masks. A copy will be sent to any reader addressing a request for Form 7625 to Conforming Matrix Corp.

For more data, circle 104 on colored card.

Cleaning-Phosphating Action of Oakite CrysCoat 187

An informative, 4-page booklet outlining the merits of Oakite CrysCoat 187, an iron phosphating material especially designed for simultaneous cleaning and phosphating by tank application, has just been released by Oakite Products, Inc., manufacturer of specialized chemical compounds for metal cleaning and surface treatment.

Its chemical stability, positive corrosion control, long solution life and dual action of cleaning and phosphating are among the particular merits cited for CrysCoat 187.

Free copies of the booklet are available from Oakite Products, Inc., 132F Rector St., New York 6, New York.

For more data, circle 105 on colored card.

Devoe, New Branch in K. C., Mo.

Early in July, Devoe & Raynolds Co., Inc., opened a new District and Branch Office and warehouse at 1706 Baltimore Ave., Kansas City, Mo. Manager of this district, which will serve 53 counties in western Missouri and 32 counties in eastern Kansas is William Calderwood, recently manager of the Devoe branch in Omaha.

Calderwood, a native of Detroit, has been with Devoe since 1949 when he joined the company as a field representative in Chicago.

Working with Calderwood in Devoe's new Kansas operation are: A. F. "Art" Clough, who has represented Devoe in that area since 1941; Byron "Barney" Crance, former manager of the Devoe Sioux City unit, who joined the company in Denver in 1956; and Herbert Bucherer, who started with Devoe last year in Moline.

Industrial Detergency

edited by WILLIAM W. NIVEN, JR., Manager, Chemical Engineering Division, Midwest Research Institute, Kansas City, Missouri

340 PAGES, $8.75

Prepared by a group of experts, each in a specific industry, this useful book offers a thoroughly up-to-date, practical treatment of the methods, materials and equipment used for industrial cleaning. It covers the compositions of detergents for specific applications, how detergents are used, factors that determine choice and usage of detergents for each particular job, problems that arise and how they are overcome, how the final results are evaluated, and future trends.

Niven's new book is designed primarily for those who directly supervise industrial cleaning operations. It will also prove of exceptional value to chemists and engineers engaged in developing new detergent materials and new cleaning methods.

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Introduction; Fundamentals of Detergency; Detergent Materials — *H. M. Gadberry;* Commercial Laundering—*Lee G. Johnson;* Dry Cleaning—*H. M. Gadberry* and *William W. Niven, Jr.;* Textile Processing—*Martin H. Gurley, Jr.;* Foods and Beverages—*John P. Greze;* Dairy Industry—*John R. Perry;* Mechanical Dishwashing — *H. M. Gadberry;* Metals Industries—*M. J. Stutzman;* General Industrial Cleaning—*H. M. Gadberry.*

INDUSTRIAL FINISHING
1142 N. Meridian St., Indianapolis, Ind.

You Can't Slip on it. Bustin Steel Products, Inc., Dover, N. J., announces the introduction of a new all directional non-skid flooring material "Protecto."

It is practically impossible to slip on "Protecto," even when heavily coated with grease and set on an angle. The primary objective in engineering this product was to make available an economical safety grille material for the "Assemble-It-Yourself" steel fabricator and maintenance shop in meeting their immediate requirements for stair treads, platforms and many other safety grille products. It is light in weight but sturdy, and comes in 9-ft. lengths, in a wide selection of widths.

PAINT FOREMAN AVAILABLE.

Twenty years' experience in all types of coating in the Automotive and Appliance fields. Capable of supervising your finishing operations, hand spray, electrostatic, and flow coating silk screen processes. Coating technology background and testing methods for quality control. Address IF-862, care Industrial Finishing.

PAINT SALESMAN WANTED.

Old established industrial finishes company located in Newark, N. J., wants an experienced salesman with a following in this field. We are ready to turn over a sizable number of house accounts to the right man. Salary and commission. Give complete background in first letter. All replies will be kept in strict confidence. Address IF-765, care Industrial Finishing.

ATTENTION: ALL FINISH SALESMEN.

If your present line does not include varnish, you are missing a bet. PERFEX VARNISHES are unexcelled (yes, unequalled) and are well known by volume finish users. Look at our display advertisement on page 23 of this magazine. If you are interested in the possibility of taking on PERFEX VARNISH in addition to your present line, write us. All replies will be kept in strict confidence. PERFECTION PAINT & COLOR CO.

CLASSIFIED ADVERTISING

The rate on ads appearing in this department is $1.00 per line of 6-pt. light face type, per insertion. Minimum charge, $5.00. Ads set in 8-pt. extra bold face type cost $2.00 per line, per insertion.

There may be certain firms or individuals to whom you do not want your reply sent. Simply address your communication to the box number in the ad and attach a separate list of names. Place both in a separate envelope addressed to Industrial Finishing Magazine, 1142 N. Meridian St., Indianapolis 4, Ind. If the advertiser is on the list you submit we will then destroy your letter. Names of advertisers using box numbers not revealed.

POSITION WANTED.

Experienced Industrial Lacquer Salesman available for a better opportunity. Has experience in all phases of the industry. Will relocate. Address IF-861, care Industrial Finishing.

HELP WANTED.

Supervisor for Finishing Department. Must be capable of mixing colors and get out quality production through good supervision. Central Wisconsin location. Well financed company. Give experience details and salary expected in first letter. Address IF-857, care Industrial Finishing.

INDUSTRIAL FINISHES CHEMIST

Wanted by well-established Finishes Manufacturer in New York metropolitan area. Must be capable of supervising small lab and be familiar with both lacquers and synthetics. Give complete background and salary required. Address IF-859, care Industrial Finishing.

EXCELLENT OPPORTUNITY—
SALES MANAGER WANTED.

Must be experienced in Industrial Trade Sales and protective coatings. Chemical background desirable. If you have these qualifications, send resume, salary requirements, in full confidence. HAEUSER, 52 Warren St., Brooklyn 1, New York.

FORMING CONSULTING COMPANY.

Capital needed to launch new, unusual consulting service locating in northern New Jersey. Seeking mature Coatings Chemist, Chemical Engineer or Mechanical Engineer with essential experience in industrial finishing activities. $20,000 required for unique, original program dealing with services and proprietary tangibles. Please respond in confidence; will reciprocate in kind. Address IF-858, care Industrial Finishing.

FURNITURE FINISHES CHEMIST WANTED.

Knowledge of formulation of lacquers, conversion varnishes and alkyd resins required. Top pay and fringe benefits. PERFECTION PAINT & COLOR CO., Indianapolis 2, Indiana.

SALESMEN WANTED.

Progressive manufacturer of industrial coatings has openings for outstanding salesmen in New York area, New England, South Eastern states, Ohio, Pennsylvania and many other lucrative areas. In addition to up to date wood and metal finishes our line extends into vinyl printing inks and adhesives for fabric and plastic laminating. Extremely close cooperation between each salesman, technical director and top management. Submit resume of background and experience. Replies held in strict confidence. Address IF-850, care Industrial Finishing.

MISCELLANEOUS

DIRTY THINNERS AND SOLVENTS WANTED.

Send samples and letters giving approximate contents. GET CASH FOR SCRAP. THE JOHANN COMPANY, 13900 Grant St., Dolton, Illinois. Phone Dolton 4850.

WANTED.

Dirty solvents and thinners. Please send samples. Have clean reclaimed solvents for sale. Modern efficient solvent recovery service. Will process for customers, material at fraction of the original cost. ACME RECLAIMING, Inc., 1915 20th Ave., Rockford, Illinois.

LET US COAT YOUR SMALL PARTS ¼-MM to 35-MM SIZES

Specialists for coating smallest of items from ¼-mm to 35-mm size; any shape, round, flat, solid or with holes, and any material, plastic, glass, wood, etc. Production methods at low cost. Any color or shade or protective coating desired.

New exclusive processes by reliable manufacturer with fifty years' coating experience. Address IF-854, care Industrial Finishing.

FOR SALE. GRAY ENAMELS $1.50 PER GALLON.

Gray Baking & Air Dry Enamels, Alkyd Melamine Hardening Resin, 45% Solids content, Xylol Solvent, heavy hiding power. Guaranteed high quality paint. 55-gal. drums only. 1-gal. samples on request. Address IF-860, care Industrial Finishing.

BARGAINS IN FINISHING EQUIPMENT

WE CARRY A LARGE STOCK OF REBUILT USED FINISHING EQUIPMENT INCLUDING BINKS, ECLIPSE AND PAASCHE AUTOMATIC SPRAY MACHINES

SPRAY BOOTHS	CONVEYORS	PHOSPHATIZING UNITS
MIXING TANKS	FANS	CENTRIFUGAL ENAMELERS
PAINT HEATERS	OVENS	DEGREASERS
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GENERAL EQUIPMENT AND TRADING CO. • 2629 W. GRAND AVE., CHICAGO 12, ILL.

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NOW . . . A ONE-COAT FINISH FOR EXTERIOR ELECTRICAL CLOSURES

Cut paint/bake time in half with new SUPER NUBELITE® thermosetting acrylic finish

June 27, 1961—The Glidden Company announces a new one-coat finish for electrical enclosures with the weather-resisting properties of traditional two-coat systems.

This newest in the family of Glidden one-coat SUPER NUBELITE finishes has just passed the stringent tests of a leading independent testing institution and is approved for suitable exterior electrical applications.

The battery of tests included salt spray, ultra-violet light and water, moist carbon dioxide-sulphur dioxide and moist hydrogen sulphide—all proving the durability of SUPER NUBELITE.

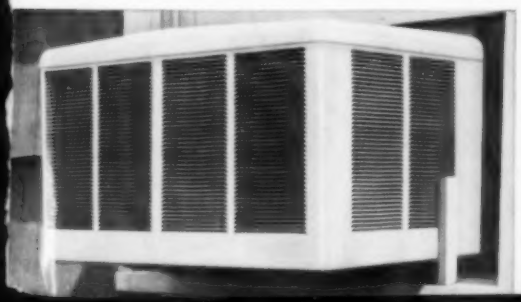
SUPER NUBELITE is applied in a film thickness of 1.5 mils and can attain theoretical coverage of 700 square feet per gallon per mil.

Other one-coat SUPER NUBELITE finishes are already in production on refrigerators, freezers and fluorescent light fixtures. Two-coat SUPER NUBELITE is now being used on clothes washers, dryers and other electrical appliances.

For complete information on one-coat SUPER NUBELITE finishes, call your Glidden representative or write direct.

Key to approval by leading independent testing institution was salt spray test. Above panel, coated with one-coat SUPER NUBELITE shows creepage of less than 1/16 in. along scribes after 2208 hours exposure.

Air conditioners and other exterior electrical enclosures can be finished with SUPER NUBELITE for superior weather protection at one-coat economy.



QUALITY Glidden PRODUCTS

THE GLIDDEN COMPANY
INDUSTRIAL PAINT DIVISION
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